

The Evolution of the American Teacher Labor Force in the Latter 20th Century: Dimensions of Gender, Race, and Salary

By

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degree of Doctor of Philosophy

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ABSTRACT

This dissertation examines three dimensions – gender, race, and salary -- of the national teacher labor force that emerged in the post-World War II period. First, teaching became increasingly feminized; it became a stable occupation for college-educated women because with the lift of the marriage bar, women were allowed to work after marriage and having children. In regards to the racial and ethnic composition of the national teacher labor force, the whitening of the Southern teacher labor force in the post-desegregation era converged to that of the rest of the United States; the rate at which white teachers were hired as teachers was greater than that of black teachers. Finally, examining the salary returns to the bachelor's in education degree in the teacher and non-teacher labor markets the findings show that the bachelor's in education degree has the greatest salary return in teaching. The standardization of teacher education resulting from institutional isomorphism led to the regional convergence in the social characteristics of American teachers. Therefore, this dissertation is an historical analysis of the homogenization in the social characteristics of the American teacher labor force in the post-war era.

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CHAPTER ONE

INTRODUCTION

The changing social composition of the American student population is a widely addressed issue in education research. A 2010 report conducted by the Metropolitan Policy Program at the *Brookings Institute* reported that by 2008, the under eighteen population reached a majority non-white status. The two major demographic explanations provided for this shift in the racial and ethnic composition of the student population are increased immigration from Mexico and Latin America and Asian countries (primarily India and China) and higher birth rates among Hispanics and African-Americans. Furthermore, research has documented the differences in the racial and ethnic characteristics of the student population between the different geographic regions, as well as metropolitan differences (see, for example Card, 2009; Chapa and De La Rosa, 2006, Frey et al., 2010). For example, in the major metropolitan areas of the South, such as Atlanta, Georgia and Charlotte, North Carolina, African-Americans are the dominant student minority group, however, in the many of the cities of the Southwest, students of Mexican and Latin American descent makeup the largest minority group (Frey et al., 2010). While increasing student diversity and its implications in education has received a great amount of attention in educational research (see, for example, Futrell, Gomez, and Bedden, 2003; Hurtado, 1996) an area that has received relatively very little research in the education literature is the increasing homogenization in the social characteristics of the American teacher labor force. The purpose of this dissertation is to analyze the homogenization and regional convergence in the social characteristics of the teacher labor force.

It is essential to note that the structure of this dissertation is unconventional. This dissertation consists of three studies that take historical, sociological, and economic approaches to studying twentieth century American teachers. Although, each chapter's research question addresses a dimension of the teacher labor force that has become increasingly homogenous during the second half of the twentieth century -- gender, race, and salary -- each chapter is a research study. Each chapter consists of its own research question, literature review, data, methods, findings, and analysis sections. First, Chapter Two utilizes United States census data to describe and analyze the increased feminization of the teacher labor force in the second half of the twentieth century. Second, Chapter Three also uses United States census data, this time to conduct a state-level fixed-effects regression to examine the loss of employment experienced by black teachers in the South after desegregation, and subsequently the increased whitening of the teacher labor force. Finally, using individual-level data obtained from the National Survey of College Graduates, Chapter Four investigates the differences in monthly salary returns of education degree recipients in various sectors of employment in the latter twentieth century.

1.1: Institutional Isomorphism

In the United States, all schools in the mass public system have teachers, students, principals and a variety of other support staff. The modern institution of school is present in all fifty states and similar educational processes are repeated in varying degrees across the nation. For example, institutional studies of schooling have shown that curriculum across most states has become very similar in content and intent over the past one hundred years; attendance in public schooling for 10-12 school years has become the norm in most states; state governments

typically assume a link between mass schooling and human capital formation; and trends in school administration have become isomorphic in regards to the preparation and training of school leaders (Fuller and Robinson, 1992; LeTendre et al., 2001). Institutional isomorphism is one of the major theories that helps explain the process of how the national education system developed, and subsequently, homogeneity, not variation, in the characteristics of the individuals in the teacher labor force. DiMaggio and Powell (1983) argued that the emergence and structure of an organizational field such as education is a result of the activities of a diverse set of organizations; and that the homogenization of these organizations results in the homogenization of its new entrants as well, once the field is established.

DiMaggio and Powell (1983) stated that by organizational field, they mean those organizations that, in aggregate, “constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services and products,” (p. 148). Therefore, the homogenization of the American teacher labor force is not the result of a single cause, but rather a variety of influences that have shaped the field, and subsequently the profession (Beckert, 2010; DiMaggio and Powell, 1983; Finkelstein, 2010). This isomorphic process has important implications for the gendered and racialized nature of this dimension of the education arena. That is, the result is the national development of a female-dominated and an overwhelmingly white occupation. The findings of this dissertation highlight the homogenization of the American teacher labor force, over time and across the various geographic regions.

1.2: The Continued Feminization of Teaching: 1950-2000

American teachers have, from the nineteenth century, been expected to encourage learning, promote citizenship, and morality—essentially, to be models of educational achievement and cultural refinement. Their contributions to the distribution of knowledge have produced both individual and societal benefits; their work has economic, social, and political value (Eberts, 2007; Hanushek and Rivkin, 2007; Jacob, 2007; Monk, 2007; Murnane and Steele, 2007). Teachers have a very important role in developing and directing future generations; therefore “*Who are American teachers?*” can be an important question. Despite their crucial role, the social characteristics of American teachers have received relatively little attention in research in recent years (Altenbaugh, 1992; Lortie, 1975; Rury, 1989; Ryans, 1969). Many researchers have identified characteristics of *high-quality* teachers, especially for rural and urban schools (see, for example, Hanushek and Rivkin, 2007; Jacob, 2007; Lankford, Loeb, and Wyckoff, 2002; Lavy, 2007; Monk, 2007), but very few have examined the social characteristics of American teachers, as a whole group, over time. Moreover, recent research has not studied the differences and similarities of American teachers across the various geographic regions of the United States. This is important because, for example, a recent *New York Times* article reports that the South has become the first region in the country where more than half of public school students are poor and more than half are members of racial/ethnic minority groups (Dewan, 2010, p. A20). The various regions of the United States – North, South, Plains, Mountain, and Pacific – have been and continue to be different in their public school student population characteristics; however, teacher characteristics have not been examined.

Studying American teachers yields insight about who they are and how their characteristics have changed. The importance of studying teacher labor markets stems from the recognition of major differences across schools, especially between different geographic regions. Although sparse, previous historical research has examined the changing social characteristics of American teachers from the Colonial period through the beginning of the twentieth century (see, for example, Rury, 1989), and in the area of economic history, research has focused on the rate of gender transformation in the American teacher labor force from the Colonial period through the early twentieth century (Perlmann and Margo, 2001). For the most part, however, scholars have conducted very little research examining the changing social differences between American teachers at a national level during the latter half of the twentieth century.

The American teacher labor force, for the most part, remains dominated by white women. However, three major characteristics have changed: marital status, age structure, and educational qualifications. The major change that occurred in the teacher labor force during the middle of the twentieth century is that married women entered and remained in the teacher labor force. In 1940, approximately 25% of women teachers were married, while approximately 70% of women teachers were single. By 2000, these proportions had reversed: approximately, 70% of women teachers were married and 17%¹ of women teachers were single.

The second major change that occurred between 1950 and 2000 is that the mean age for teachers increased. In 1950, the mean age of American teachers was 36 years and by 2000, the mean age increased to 42 years. This is mostly the result of married women entering and staying in the occupation. The final major change that occurred in the latter half of the twentieth century

¹ This percentage only includes those women who were “single, never married.” Women were “widowed” or “divorced” were not included. For 2000, 70% of women were married, 17% were single, never married, and 13% were either divorced or widowed.

is that American teachers, across the different geographic regions held similar educational qualifications. By the 1960s, the majority of American teachers had earned a four-year college/university degree and beginning in the 1980s, elementary and secondary teachers underwent different preparation programs. Currently, secondary teachers, for the most part, are required not only to obtain a degree in education but also obtain a level of expertise in the subject-matter they plan to teach, whereas for elementary teachers, a degree in education is sufficient. In the second chapter, the focus is on these changes to explain why teaching has become a more stable occupation, particularly for married women, and describe the increasing educational qualifications of American teachers. These changes in the social characteristics of American teachers occurred across the major geographic regions during the second half of the twentieth century, thus it is possible to say that regional convergence in the American teachers' characteristics created a national teacher labor force.

1.3: The Whitening of the Southern Teacher Labor Force Post-Desegregation: 1940-1980

The post-desegregation experience of black teachers presents a striking example of the problem the United States faces in recruiting and retaining able, well-prepared, and racially diverse public school teachers. The proportion of teachers who are black has been on steady decline since desegregation. In 1970, 12% of the national teaching force was black, and by 1991, this percentage dropped to 8%. The proportion further decreased by the 2008-2009 academic year, when approximately 7% of all K-12 public school teachers were African-American (NCES, 2007-08). Meanwhile, the population of black K-12 public school students has been increasing; in 1993, nearly 16% of all public school students were black, and by the

2008-2009 academic year, approximately 17% of all public school students were African-American (NCES, 2008-2009). Much of this increase in the black student population is due to disproportionately high birth rates among blacks and the increased immigration of blacks during the 1990s from African countries (see, for example Kent, 2007). Kent (2007) reported that 17% of the growth in the black population in the United States during the 1990s was due to immigration from the African countries. Some researchers have argued that black children need to have at least some black teachers to provide valuable role models as productive leaders of society (Gordon, 2005; King 1993). At one time, this was the case due to *de jure* and *de facto* segregation, but now the majority of black students are taught by white teachers (Futrell, 1999; King, 1993; Shipp, 1999).

Until the 1960s, teaching was one of the few professional fields widely open to racial and ethnic minority groups. At the time, teaching was viewed as a prestigious occupation because teachers contributed to society by making a difference in children's lives. In addition, teaching was an occupation that provided financial stability by providing a consistent income. Before the *Brown v. Board of Education* (1954) decision, black teachers taught all black children who attended school. These black teachers acted as leaders and role models, providing guidance to black students. After *Brown* (1954), schools were eventually required to integrate, and as a result, it is reported that many black teachers lost their jobs or were demoted, and those who remained were scattered throughout integrated schools (Fairclough, 2007; Gordon, 2005; Orfield, 2005; Shaw, 1996). Although this was considered to be a positive advancement for future generations because it aimed to close the racial gaps in education resources, it came at a large cost to black teachers (Fairclough, 2000, 2007; Foster, 1997; Tillman, 2004).

Historically, the South has consistently had a higher percentage of black teachers. It is also a region where blacks historically have faced greater racial discrimination, especially in the labor market (see, for example, Lichter, 1985, Lichter, Fuiguitt, and Heaton, 1989; Semyonov et al., 1984; Tigges and Tootle, 1993; Tomaskovic-Devey and Roscigno, 1996). Because of this, data obtained from the Integrated Public Use Microdata Sample (IPUMS) database, are used to examine the post-desegregation South to identify specific states where black teachers were most affected by desegregation. Specifically, my research question is: *In which Southern states were fewer black students taught by black teachers, and how did this change between 1940 and 1980?* Using a one percent sample of all teachers for the census years 1940, 1960, 1970, and 1980, a fixed-effects regression with state-level data is performed to quantitatively explain the experience of black teachers and highlight the relationship between race, place (state), and employment status, focusing on the South. The findings of Chapter Three show that contrary to the previous research on the employment experience of southern black teachers after desegregation, the absolute size of the southern teacher labor force increased and both the absolute number of black and white teachers increased. However, the number of white teachers hired was much greater than the number of black teachers hired, and thus, there was a *relative loss* in the number of black teachers.

The findings of Chapters Two and Three illustrate the phenomenon of regional convergence in regards to the increased feminization, aging, uniformity in educational qualifications, and whitening of the American teacher labor force. Coercive isomorphism -- external pressures exerted by the government -- may help explain the increased feminization and whitening of the national teacher labor force. The decreased use of the marriage bar and the desegregation decision are two such government mandates that seem to have added to this

isomorphic trend in the individuals who make up the American teacher labor force. By the early twenty-first century, the majority of American teachers, within and outside the South, were married white women. Chapter Four studies a particular facet addressed in Chapter Two of the American teachers – monthly salary returns to their educational qualifications.

1.4: The Monthly Salary Returns to the Education Degree and Teacher Salary: 1993 and 2003

Chapter Four explores teacher salary, a perpetually contentious issue. Many believe teachers are paid too little, while others think teachers are overpaid. Many school leaders debate increasing the salaries of teachers because they are uncertain of the role of salary in recruiting and retaining the teachers needed to educate students to high-achievement standards (Figlio, 1997; Odden and Kelley, 2002).

Teacher quality is a much explored topic in the current education research and most of the research attempts to make a statement by relating student achievement to teacher quality. Most of these studies compare and contrast student achievement of alternatively certified teachers and student achievement of traditionally trained teachers; however, the findings of these studies are mixed (see, for example, Goldhaber and Brewer, 2006; Darling-Hammond et al., 2001; Darling-Hammond and Baratz-Snowden, 2005). Furthermore, many teacher quality research studies attempt to make a statement about teacher salary (see, for example, Bacolod, 2007; Ballou, 1996; Loeb and Page, 2000). The purpose of this chapter is to focus on the salary returns of education degree holders, the primary field of study for many teachers. The intention of this chapter is to compare and contrast the salary returns of education degree holders across various occupations to determine in which field of work the degree most valued.

Labaree (2004) stated that one of the major functions of schools of education is to prepare teachers, but, he writes, “Teacher Education, it turns out, is at the heart of the trouble with ed schools,” (Labaree, 2004, p. 17). He noted that the teacher education major is the “low-status option” for undergraduate students no matter the quality of the higher education institution (Labaree, 2004). If the teacher labor market monetarily rewards teachers with education degrees higher than teachers with non-education degrees, then human capital theory would suggest that the education degree provides the necessary knowledge and skills to be a good teacher, while signaling theory would suggest that the education degree provides an indicator, or signal, to being a good teacher (see, for example, Becker, 1993; Kaufman and Hotchkiss, 2006). Thus, investigating whether the teacher labor market monetarily rewards certain teachers by examining their undergraduate majors is the focus of the first research question: *Among teachers, what are the differences in monthly salary returns between those who have degrees in education compared to those who do not hold degrees in education?*

In addition, the monthly salary returns of those who majored in education and are not working in education are also studied. Therefore, a second research question is: *Among those who majored in education, are there differences in monthly salary returns between those who work in education compared to those who work in another sector of employment?* To understand the specific effects of “undergraduate education major,” an ordinary least squares multiple regression, controlling for a number of employment sector and individual-level factors, was conducted to examine the significance of particular educational qualifications in determining monthly teachers’ salaries and monthly salaries of education degree recipients. The intent of this chapter is to determine if, in fact, the education degree has the greatest monthly salary return in teaching compared to non-teaching occupations. This chapter’s findings show that those

individuals whose highest degree was a bachelor's in education and who work as teachers have, on average, the highest salary compared to those bachelor's in education recipients who are not teachers. Thus, the undergraduate education degree is most rewarding to those who work as teachers.

1.5: Concluding Remarks

Each chapter of this dissertation discusses a dimension of change in the social characteristics of the American teacher labor force over time and across the various geographic regions. As the title of this dissertation suggests, gender, race, and salary are important components of the national teacher labor force that was created in the second half of the twentieth century. DiMaggio and Powell (1983) explained that there are two aspects of professionalism that are important sources of isomorphism. One is the placing of formal education and legitimization in a cognitive base produced by university specialists; the second is the growth and cultivation of professional networks that span organizations and across which new models diffuse rapidly. The placement of teacher education programs in the university setting helped develop organization norms and also provided a pool of interchangeable, similar individuals. This isomorphic trend -- the homogeneity in the social characteristics of American teachers across the various regions of the United States -- has important implications for the occupation.

The final chapter summarizes the findings from each chapter of this dissertation. In addition, Chapter Five discusses the possible implications of having a national teacher labor force that has consistently been female and white, and has suffered from having a non-

competitive salary in the overall labor market. However, future research should study if the female-dominated and white teacher labor force does, in fact, have any effect on the career choices of young students.

Chapter Three finds that the number of white teachers in the South increased at a greater rate than the number of black teachers, but does not study the reasons for why more white teachers were hired. It would be beneficial if further research on the southern black teacher labor force addressed the possible reasons for this finding. Possible reasons for the relative loss in the number of black teachers could be due to the increased opportunities available to educated blacks after desegregation and the Civil Rights Act (1964) -- a smaller number of educated blacks were choosing teaching, thus the relative loss in the black teacher labor force. However, this cannot be firmly stated without deeper investigation.

This dissertation does not discuss the quality of the teacher labor force during the post-World War II period. However, given the findings of Chapter Four that undergraduate education degree recipients earn, on average, higher salaries in teaching compared to in non-teaching fields, future studies on teacher salary and teacher quality should be able to identify characteristics of the particular education degree recipients who chose teaching and stayed in the occupation. Are the undergraduate education degree recipients who choose teaching and stay, in fact the most academically talented teacher-education students? It is sufficient to state that the findings of this dissertation create a number of more research questions in regards to the American teacher labor force.

CHAPTER TWO

PROFILE OF AMERICAN TEACHERS: 1950-2000

2.1: Consistency and Change in American Teachers' Social Characteristics

According to the United States Census Bureau, American school enrollment has been on the rise since 1980. In 1980, approximately forty million students were enrolled in American schools, and by 2000, a little over forty-five million students were enrolled. By 2007, a record of fifty million students were enrolled in the nation's elementary and secondary schools (National Center of Education Statistics (NCES), 2007-08). Demographers explain that this increased enrollment is largely due to birth rates among children of Baby Boomers and an increase in families immigrating to the United States. Moreover, census data depicts a changing profile of the children, particularly since the 1980s, entering American schools. As Table 2.1 shows, the proportion of minority students has been and is projected to continue increasing. In 2007, student enrollment was quite racially and ethnically diverse compared to previous decades. Although the majority of the public school student population, 55.8%, was native-born non-Hispanic white, the largest racial/ethnic minority groups among the enrolled population were blacks at 17.0%, Hispanics at 21.1% and Asians at 4.8% (NCES, 2007-08).

Table 2.1: Percentage Distribution of Elementary and Secondary School Enrollment, By Race/Ethnicity: Selected Years

School-Year	White	Total Minority*	Black	Hispanic	Asian
1986-87	70.4	29.6	16.1	9.9	2.8
1991-92	67.4	32.6	16.4	11.8	3.4
1996-97	64.2	35.8	16.9	14.0	3.8
2001-02	60.3	39.7	17.2	17.1	4.2
2006-07	57.1	42.9	17.2	19.8	4.6

*Total Minority includes Black, Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native Students
Source: U.S. Department of Education, Office for Civil Rights, 1986 State Summaries of Elementary and Secondary School Civil Rights Survey; and National Center of Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey," selected years, 1991-92 through 2005-06 and "State Nonfiscal Survey of Public Elementary/Secondary Education," 1997-98 and 2007-08.

As a result of this important change – the rise in the number and diversity of students -- interest in who is teaching American students has increased. Therefore “Who are American Teachers?” can be an important historical and sociological question. The demographics of the American teaching force do not mirror student populations in terms of race, ethnicity, and gender. The teaching force mainly consists of white American, middle class, native-born females. In fact, throughout the second half of the twentieth century, the majority of the American teacher labor force has been women. Henke et al., (2005) reported, “[A]lthough the population of elementary/secondary level students has become increasingly diverse in the last twenty-five years in terms of race/ethnicity, elementary and secondary school teachers are, and have been for some time, largely White” (pp. 5). Furthermore, Valora Washington (2009) reported that the proportion of male teachers in elementary schools, has reached a forty year low; less than 15% of elementary school teachers were male in 2005.

Adding to these concerns, the American teaching force is aging (Aaronson, 2008; Wayne and Youngs, 2003). In 2007, approximately 18% of teachers were under the age of thirty years; 82% of teachers were over the age of thirty years and 16% of these teachers were above the age

of fifty-five years (NCES, 2007-2008). Although a more experienced teacher labor force may be beneficial to students, the concern is that retirement of the Baby Boomers will cause a loss in work experience; the number of school teachers that will need to be hired will increase due to the retirements of Baby Boom teachers (Aaronsen and Meckel, 2008). Beginning in the 1950s, many women teachers continued to work in the occupation longer, a significant change because women of the early twentieth century were discouraged from working after marriage, specifically in professions.

The changing nature of women's roles in society, particularly their work roles, is one important variable associated with social change. Oppenheimer (1973) stated that because of a variety of demographic factors, significant increases in the female labor force participation became necessary after World War II. The overall increase in female work rates resulted in a major change in the relationship between women's education, work experiences, and family life cycles. Given that the teacher labor force did and continues to primarily consist of women, this chapter examines the consistency and change in teacher characteristics over time and across major geographic regions.

In the case of teachers, the latter half of the twentieth century has witnessed *consistency*, because teachers continue to be largely female and white, and *change*, in that many women continue to work in the occupation after marriage and having children, thus creating a teacher labor force consisting of primarily older married women. Moreover, within the teacher labor market, there has been *change* with respect to teachers' education and training requirements (i.e. credentials). With the development of alternative certification programs in the 1980s, types of teacher education and preparation programs now vary. Additionally, educational qualifications differ between elementary and secondary school teachers. This chapter examines the changing

social profile of American teachers in the second half of the twentieth century, because detailed information on their social characteristics can provide a sense of how the national teacher labor force has evolved.

2.2: Research Design

Data

I use census data for the years of 1950 through 2000 obtained from the Integrated Public Use Microdata Series (IPUMS-USA). Given the vast variation in regional histories of the United States, the division of the states into distinct geographic regions is essential. According to the United States Census Bureau, the nation is divided into nine distinct census divisions: *New England, Middle Atlantic, South Atlantic, East South Central, East North Central, West North Central, Mountain, and Pacific*. Based on prior research that studies regional convergence in the United States (see, for example, Kim 1997, 1999), I grouped the New England and Middle Atlantic division into the **North**; the South Atlantic, East South Central, and West South Central into the **South**; the East North Central and West North Central into the **Plains**, and the **Mountain** division is labeled its own region as is the **Pacific** division.

Conceptual Framework and Methodology

The analysis for this chapter is descriptive. The purpose of this chapter is to illustrate the increased feminization across all geographic regions in the national American teacher labor force during the second half of the twentieth century after the lift of the marriage bar. In addition, the the increased educational attainment levels of American teachers across all geographic regions

during the second half of the twentieth century is also described. The descriptive findings of this chapter are supported by the theory of institutional isomorphism, however, it should be noted that the changing structure and management of organizations is not the cause of these demographic trends in the teacher labor force.

2.3: Findings

The Changing Age Structure and Marital Status of the Female-Dominated Teacher Labor Force

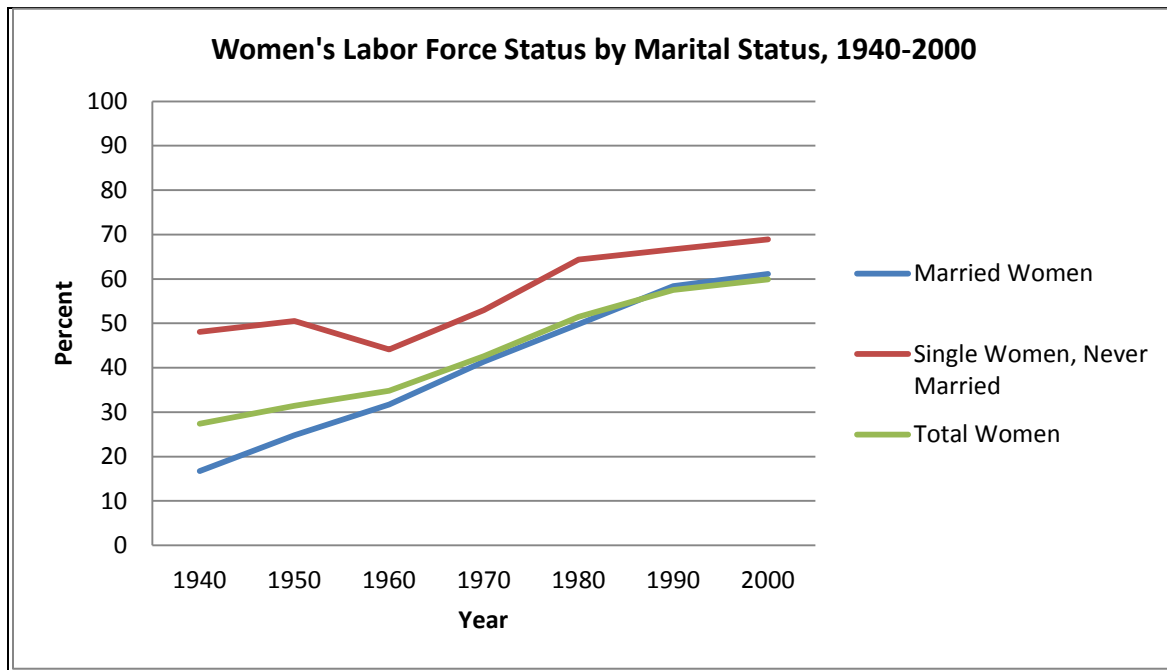
No single subject is more central to the history of the teaching profession than the changing role of women in American society” (Sedlack and Scholossman, 1986, p. 28).

While the extent to which women have contributed to the economy outside their homes has considerably changed over the twentieth century, gender has always been one of the strongest determinants of who would be found working in specific occupations. There have been broad social as well as legal changes in American society that have contributed to the increase in women’s participation in the paid economy. For example, the advances of the women’s movement, enactment of laws prohibiting sex discrimination, increased enrollment of women in higher education and professional schools, the steady increase in women’s labor force participation, and changes in societal attitudes towards women’s education and employment are some of the changes that have occurred. However, differences in the employment distribution of women and men within occupations have been, and continue to be, a prominent feature of the

American labor market. Women were and continue to dominate certain occupational and professional fields more than others (Goldin, 1990, 1994; Oppenheimer, 1973; Wooten, 1997).

In 1900, if a woman worked at paid employment during her lifetime, it was only before marriage and children; the proportion of employed women declined steadily with age. Beginning in the 1940s, this traditional pattern changed, and women began to work outside the home at higher rates (Oppenheimer, 1970, 1973, 1982). By 1980, 50% of American women between the age 18 and 64 years were in the labor force, compared to approximately 25% in 1940 and 18% in 1900 (U.S. Census Bureau, Statistical Abstract of the U.S., 1975, 2010). More important is the changed relationship between women's labor force participation and family life cycle. Figure 2.1 shows the increases in the proportion of single and married women working outside the home during the latter half of the twentieth century. The proportion of married women who participated in the labor force steadily increased; the proportion of married women grew by 44.4%, whereas the proportion of single women in the labor force increased by only 20.8% between 1940 and 2000. This increased participation of women, particularly married women, is a significant feature of American economic and social development because it allowed women to enter into a variety of occupations (Oppenheimer, 1970, 1973, 1982).

Figure 2.1: Percentage of Women in the Labor Force by Marital Status, 1940-2000



Source: "Marital Status of Women in the Labor Force Status" U.S. Census Bureau, Statistical Abstracts of the United States, 1971, 1975, 2010

While women currently work in almost every occupation and profession, teaching has been and continues to be a female-dominated occupation. Only a few years into the early twenty-first century, the occupation continues to become increasingly female. In 1999-2000, 75% of American public school teachers were women; in 2007-08, this proportion increased to approximately 80% (NCES, 2007-08). Using census data, Table 2.2 reveals the extent to which the occupation has consistently remained female-dominated throughout the second half of the twentieth century; the percentage of female American public school teachers has been relatively steady at approximately 75%.

Table 2.2: Proportion of Female Teachers, 1940-2000, IPUMS Sample

Census Year/Gender	Male[*]	Female[*]	Total[*]	Percent Female^{**}
1940	2,725	8,069	10,794	74.7
1950	3,049	7,586	10,635	71.3
1960	5,123	16,873	21,996	76.7
1970	9,502	27,283	36,785	74.2
1980	12,629	31,951	44,580	71.6
1990	13,981	39,980	53,961	74.1
2000	14,405	44,396	58,801	75.5

Source: IPUMS

^{*}Number reported refers to n (sample size)

^{**}Percentages are weighted

Teaching was not always a female-dominated occupation. Two major historical and sociological research studies explain the transformation of teaching into women's work. The first study, Perlmann and Margo's (2001) *Women's Work?: American Schoolteachers, 1650-1920*, focused on the gender composition of America's teachers during the eighteenth and nineteenth centuries in America. Using Integrated Public Use Microdata Samples (IPUMS) data, they explained the transformation of teaching into "women's work," and, furthermore, they compared and contrasted the differences in the rates of transformations between the North and the South. The feminization of teaching occurred first and foremost in the North, specifically the Northeast. Perlmann and Margo (2001) explained that in the Northeast, the use of females during the summer session, when young boys and girls were instructed in the beginning levels of reading and writing, and the widespread use of dame schools, in which young women instructed young girls in literacy, contributed to the feminization of teaching in the Northeast. In addition, they noted that women proved to be able to handle the work of teaching when they replaced men during the Civil War due to male absence (Perlmann and Margo, 2001). Thus, since the middle

nineteenth century, the teaching force has been predominantly female (Dworkin, 1980, Rury, 1989; Sedlack and Schlossman, 1986; Perlmann and Margo, 2001).

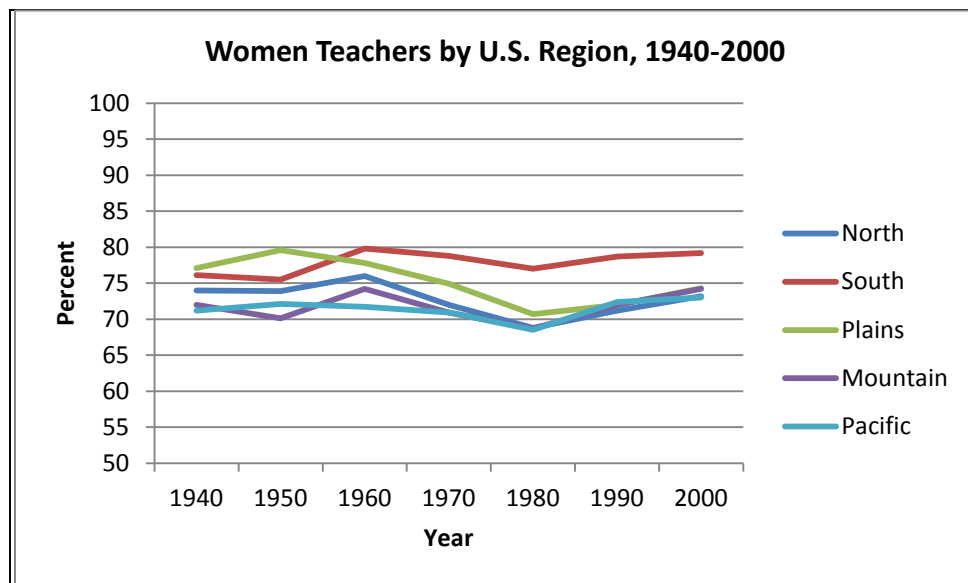
In the second study, Rury (1989) provided a detailed analysis of why the American teacher labor force remained a female-dominated occupation in the late nineteenth century and early twentieth century. Studying demographic characteristics, he explained the North's teacher labor force continued to feminize at a faster rate than the South because of the region's faster rate of industrialization and urbanization and growing enrollment rates. In regards to increased enrollment, he finds that the Northeast was the most advanced region in the country, with more than nine out of ten students attending school for six months or more. As a result of increasing enrollment, the demand for teachers was high. For men, teaching was often a supplementary job performed in addition to other paid work, but, as the student population increased, men could no longer manage both teaching and their primary occupations, and so they began to exit the classroom. Rury (1989) stated that during the late nineteenth century, the nation's least industrialized and urbanized region was the South and that it was there where women teachers were least visible, although women constituted a greater proportion of teachers, the proportion was not as high as in the North. At the time, the South was still primarily an agricultural economy, and so children continued to work as agricultural laborers, thus enrollment levels in the South were not as high as in the North. He pointed to the changed organization of schools as a factor explaining why teaching continued to be a female-dominated occupation; male principals and board members supervised female teachers' work (Clifford, 1989; Rury, 1989).

Even though, during the early twentieth century, the North's teacher labor force became predominately female at a faster rate than the South, by the beginning of the second half the twentieth century, there was very little difference between the various regions in the proportion

of women teachers. There was nationwide convergence in the proportion of teachers who were women. Figure 2.2 shows the proportion of women teachers in the major regions of the United States during the second half of the twentieth century. Although the South had the lowest proportion of women teachers during the early twentieth century, by the end of the twentieth century, the South not only caught up to the North, but surpassed it and had the highest proportion of women teachers; in 2000, 79.2% of teachers were women. Approximately, three-quarters of the teacher labor force in the other regions--North, Plains, Mountain, and Pacific--were women. These similar regional proportions illustrate the nationwide convergence in the gender composition of the teacher labor force.

Rice and Coates (1995) studied the cultural differences between the South and the other regions of the United States to explore if and to what extent traditional gender roles persisted to determine whether the South can be characterized as a culturally distinct region. Using the National Opinion Research Center's (NORC) General Social Survey, Rice and Coates (1995), found that gender roles attitudes do vary by region. In the South, opinions about women's employment—whether they should work and what work they should do—remain conservative and traditional. Hurlbert (1989) also found that the South is a distinctive cultural region and that traditional attitudes toward women persist. These traditional attitudes include the beliefs in the division of labor in which women undertake the primary responsibility for domestic and childrearing tasks, the disapproval of women holding jobs outside of the home, and especially of their undertaking tasks involving responsibility or authority in the workplace. Thus, in contrast to Southern women, who might be constrained by the traditional social customs, women in the other regions of the United States were more progressive and thus more likely to pursue professional careers.

Figure 2.2: Proportion of Women Teachers by U.S. Region, 1940-2000, IPUMS Sample



Source: IPUMS – State-Level Data
*Percentages are weighted

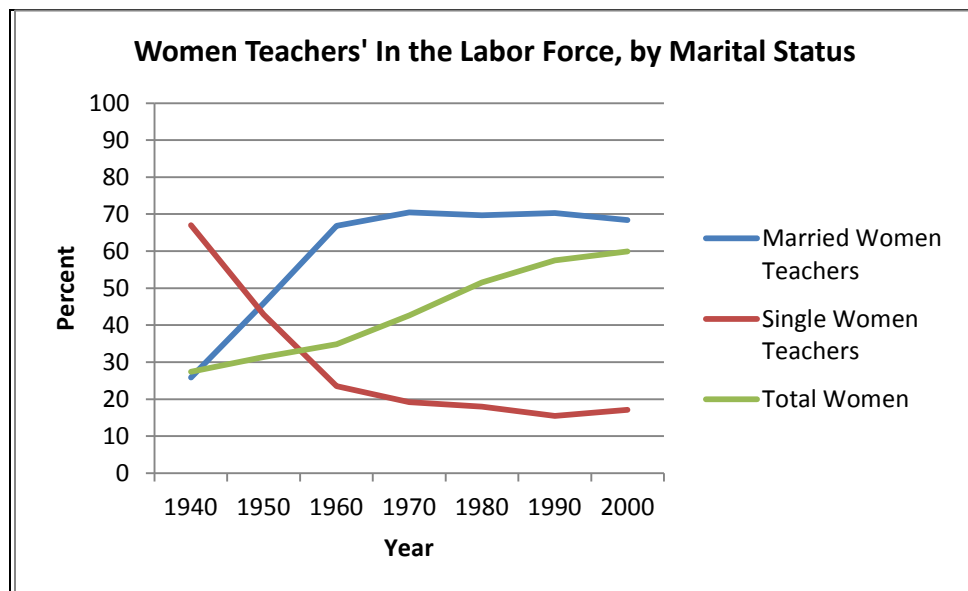
Although women continue to make up the majority of the teacher labor force across all regions of the United States, the demographic profile of these women who work as teachers has significantly changed over the second half of the twentieth century. Throughout the nineteenth century, most women who chose to be teachers did so because the majority of other occupations were not open to them; therefore, in this extremely limited labor market, educated women who wanted to work outside the home worked as teachers (Goldin, 1990; Rury, 1986, 1989; Temin, 2002). In addition, most of these women were single because married women were discouraged from working outside the home. Thus, the majority of American teachers during this period were young, highly educated, single women (Goldin, 1990; Rury, 1986, 1989). However, beginning in the 1950s, married women entered and stayed in the labor force, which significantly affected the female composition of the teacher labor force.

Before 1950, many school boards did not hire married women. Goldin (1988, 1990, and 1991) described the widely practiced policy referred to as “marriage bars.” Marriage bars were adopted and implemented by school districts and firms from the late nineteenth century to about 1950. The marriage bars consisted of two different policies: the “hire bar,” which prohibited the hiring of married women, and the “retain bar,” which banned retaining women at work once they got married. These bars have proved to be the most damaging form of discrimination in the employment of married women. As Rury (1986) explained, for early twentieth century women teachers, their family was who they should be most dedicated to, and many felt that the best measure of a woman’s teaching experience was the manner in which it prepared her to be a mother. Specifically examining teachers, Goldin (1990) found that in 1928, 61% of all American school districts would not hire a married women teacher and 52% of would not retain any woman teacher who married while under contract. Both types of bars increased during the Depression, due to the extensive rationing of jobs, and by the beginning of World War II, 87% of all American school districts would not hire married women and 70% would not retain single women who married.

The practice of using “marriage bars” began to decrease after WWII and, especially, in the 1960s, mostly due to the fact that the supply of young, single, educated women decreased. As a result, the proportion of women teachers who were married increased in the 1940s and 1950s and stabilized post-1960s, as Graph 2.3 shows. In fact, Goldin stated, “[t]he period to about 1920 can be viewed as the era of single women’s work, while that from 1920 can be depicted as the era of married women’s work,” (1990, p. 57). Thus, for women teachers, the monumental change was the continued work of married women in the occupation.

Figure 2.3 shows that the proportion of married women teachers increased by 42.6% from 25.8% in 1940 to 64.4% by 2000, while the proportion of single women teachers decreased by 49.9% from 67.0% in 1940 to 17.1% by 2000, indicating that teaching became an occupation dominated not just by women but by married women. Goldin (1988, 1990, and 1991) stated that this occurred in two phases, thus affecting two age groups of married women. Between 1940 and 1960, the disregard of marriage bars affected older married women more than it did younger married women. Between 1960 and 1980, the withdrawal of marriage bars affected younger married women and those with pre-school age children. The difference between the older cohort and the younger cohort is due to the Baby Boom of the post-war period. In the 1940s and 1950s, women were marrying younger and having larger families than in the previous generation and thus could not partake equally in the general increase in female employment rates. Young married women might have been working during WWII, but they left the labor force when the war ended to start their families and in response to pressure that companies faced to re-hire returning service men. Older married women, on the other hand, joined the workforce after WWII as never before, largely due to the fact that they did not have young children in their households to look after and thus had time to work outside the home. Rury (1989) further explained that the postwar Baby Boom resulted in an increase in school enrollments, which created a need for more school resources in the 1960s and 1970s. Thus, after 1960, more teachers were needed to meet the demand generated by rising student populations. Many young married women of the 1940s re-entered the teacher labor force in the 1950s and 1960s, and numerous young single and married women entered teaching for the first time because it remained a good job, one that was stable.

Figure 2.3: Percentage of Women Teachers in the Labor Force by Marital Status, 1940-2000 IPUMS Sample



Source: IPUMS – Individual-Level Data

* Divorced and widowed women are not included in any of the categories.

** Percentages are weighted.

As Goldin (1988, 1990, and 1991) noted, the end of marriage bars had different effects on the younger cohort and older cohort of married women. In 1940, 26% of women between the ages of 35 years and 54 years were working. By 1950, the labor force participation of women in this age group increased to 49%. This labor force participation pattern among women older than 35 years of age persisted; by 1970, 93%, of women above 35 years were in the labor force (Oppenheimer, 1973; U.S. Bureau of Labor Statistics, 1971). The 1950 participation rates for young married women indicate that work in this stage of life was a rather rare occurrence: in 1950, only 26% of young married women between 20 years and 29 years, those most likely to have young children in the home, were in the labor force. By 1970, the participation rate of married women between the age of 20 years and 29 years was 83% (U.S. Bureau of Labor

Statistics, 2008), suggesting that more women were working despite having young children. Indeed, the proportion of working married women 20 years to 24 years with preschool children increased from 13% in 1951 to 34% by 1970. From 1960 to 1969 alone, these rates rose by 82%, from 18% to 33% (U.S. Census Bureau, Statistical Abstract of the U.S., 1975).

Table 2.3 presents a correlation matrix between the number of married female teachers and the number of children in the family for each year between 1940 and 2000. The correlation matrix provides key information about the relationship between women teachers' employment status and the number of children they have. In 1940, there was a significant negative relationship between married women teachers working outside the home and the number of children they had. Having more children decreased the likelihood of the women teachers working. In 1940, the negative relationship was stronger for married women teachers with children under the age of five years. During the 1950s and 1960s, the relationship between women teachers' employment status and number of children was still negative, however, beginning in the 1970s, the negative relationship decreased in size, and by 1990, the relationship between number of children and female teacher employment became positive. However, the relationship between number of children under five years and female teacher employment was negative throughout the second half of the twentieth century.

Table 2.3: Correlation Matrix: Female Teacher Employment and Number of Children

	1940	1950	1960	1970	1980	1990	2000
Numb. of Children	-0.304**	-0.241**	-0.206**	-0.150**	-0.088**	0.005**	0.017**
Numb. of Children Under 5 Years	-0.331**	-0.286**	-0.306**	-0.215**	-0.086**	-0.036**	-0.034**

Source: IPUMS Sample – Individual-Level Data

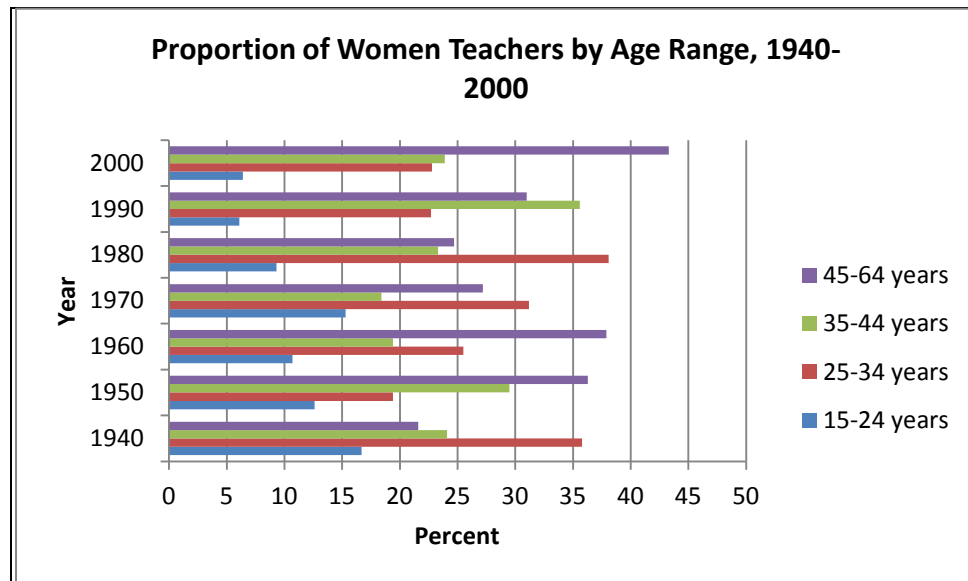
**Significant at the $p < 0.010$

Using IPUMS data to examine teachers specifically, Figure 2.4 shows that after the marriage bars were lifted, a large proportion of older women worked as teachers. Those female teachers over the age of 45 years increased their participation between 1940 and 1960. In 1940, 21.6% of female teachers were above the age of 45 years, and by 1960, 37.9% of female teachers were above the age of 45 years. Those young single and married women who entered the teacher labor force in the 1940s, stayed in the teacher labor force and as a result, the mean age of American teachers increased in this post-World War II era as Figure 2.5 illustrates.

In the post-1960s era, the teacher labor force became notably younger -- there is an increase in participation of younger women, which follows Goldin's (1988, 1990, and 1991) explanation. In addition, using data from the National Center of Education Statistics (NCES), Grissmer and Kirby (1997) explain that during the 1960s and early 1970s, the Baby Boom generation increased school enrollments dramatically, and as a consequence the demand for new, entry-level teachers increased. Therefore, a larger proportion of teachers in the 1960s and 1970s were in the younger age group (25-34 years); they increased their participation between 1960 and 1980, most probably after they completed childbearing. Figure 2.4 shows that in 1960, 25.5% of female teachers were between the ages of 25-34 years, and by 1980, 38.1% of female

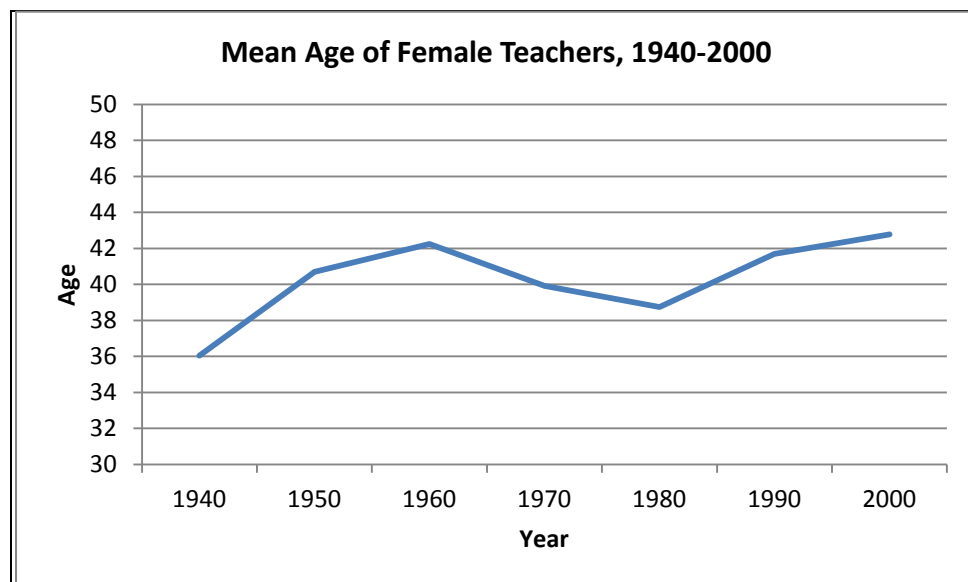
teachers were between the ages of 25-34 years. Moreover, as suggested by the trends for the 25-34 years and the 35-44 years, members of the younger cohort who entered the labor force in the 1960s through 1980s were staying in teaching, suggesting that women were staying in the occupation longer. In fact, Figure 2.5 shows the mean age of American female teachers increased between the years 1940 and 1960 from 36.03 years to 42.25 years, reflecting the older cohort of women entering the teacher labor force. Between 1960 and 1980, when the younger cohort of women entered the teacher labor force, the mean age decreased to approximately 38.74 years. Finally, between 1980 and 2000, the mean age increased again to approximately 42.78 years. As the Baby Boom generation passed through the school grades and enrollments declined, in the late 1970s and early 1980s, the demand for new entry-level teachers decreased (Grissmer and Kirby, 1997). This suggests that the young women who entered teaching in the 1960s stayed in teaching. The increasing mean age of women teachers reflects their commitment to teaching as a long-term career, which was not evident among women teachers in the late nineteenth and early twentieth century.

Figure 2.4: Distribution of Women Teachers, by Age Group, 1940-2000, IPUMS Sample



Source: IPUMS – Individual-Level Data
 ** Percentages are weighted.

Figure 2.5: Mean Age of Female Teachers, 1940-2000, IPUMS Sample

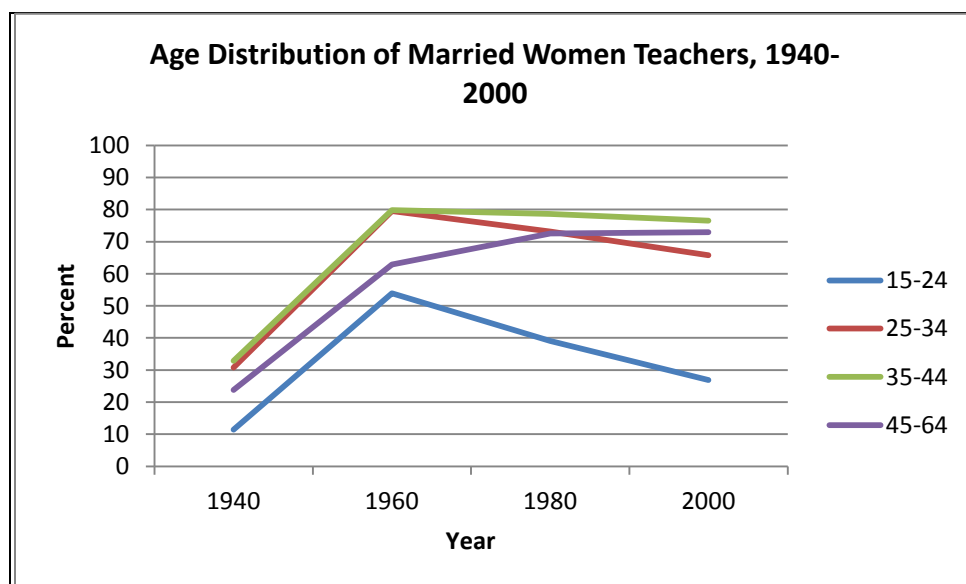
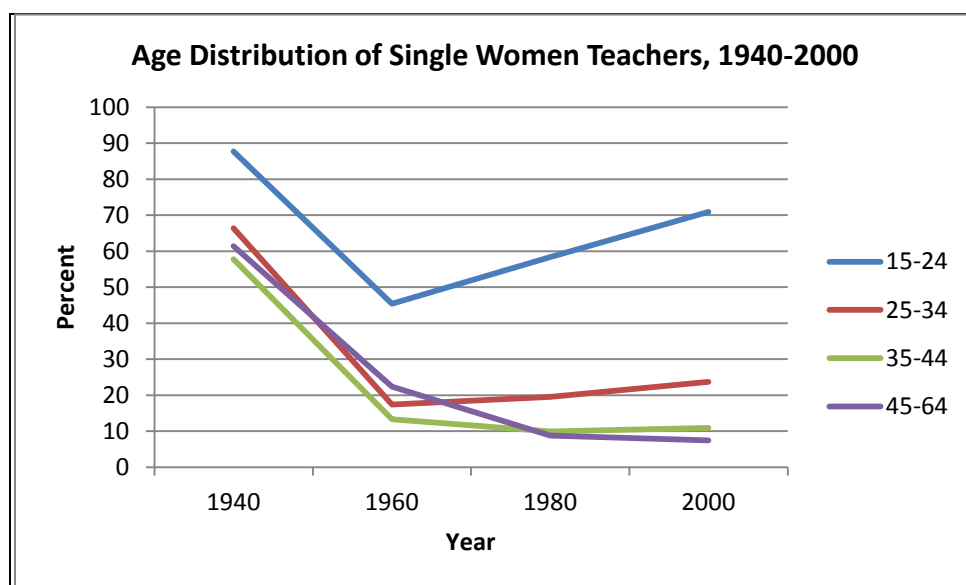


Source: IPUMS – Individual-Level Data

Figure 2.6 shows the proportion of women teachers who were single and married by age range. Over time, the proportion of single women teachers decreased. In 1940, the majority of young teachers were single; 87.7% of teachers between 15 years and 24 years were single and 66.4% of teachers between 25 years and 34 years were single. Even in the older age groups, the majority of teachers were single; 57.7% of teachers between the 35 years and 44 years were single, as was 61.4% of teachers between the 45 years and 64 years. However, by 1960, there was a dramatic increase in the proportion of married women joining the teacher labor force, particularly those in the older age groups; 79.5% of married women in the age group 25 years to 34 years and 79.8% of married women in the 35 years to 44 years worked as teachers in 1960.

Young single women teachers continued to enter the teacher labor force, but they did not leave the labor force because they married and had children. The proportion of single women teachers between the age of 15 years and 24 years was 58.4% in 1980, and decades later, they seemed to get married but continued to work. By the early twenty-first century, the proportion of married women teachers in the 25 years to 34 years and 35 years to 44 years age groups was 76.5% and 72.9%, respectively. With the Baby Boom generation passing through the schools in the 1960s and 1970s, and with women staying in the profession after marriage and children, there were few openings for younger women in the post-1980s period.

Figure 2.6: Age Distribution of Single and Married Women Teachers, 1940-2000, IPUMS Sample



Source: IPUMS – Individual-Level Data

* Divorced and widowed women are not included in any of the categories.

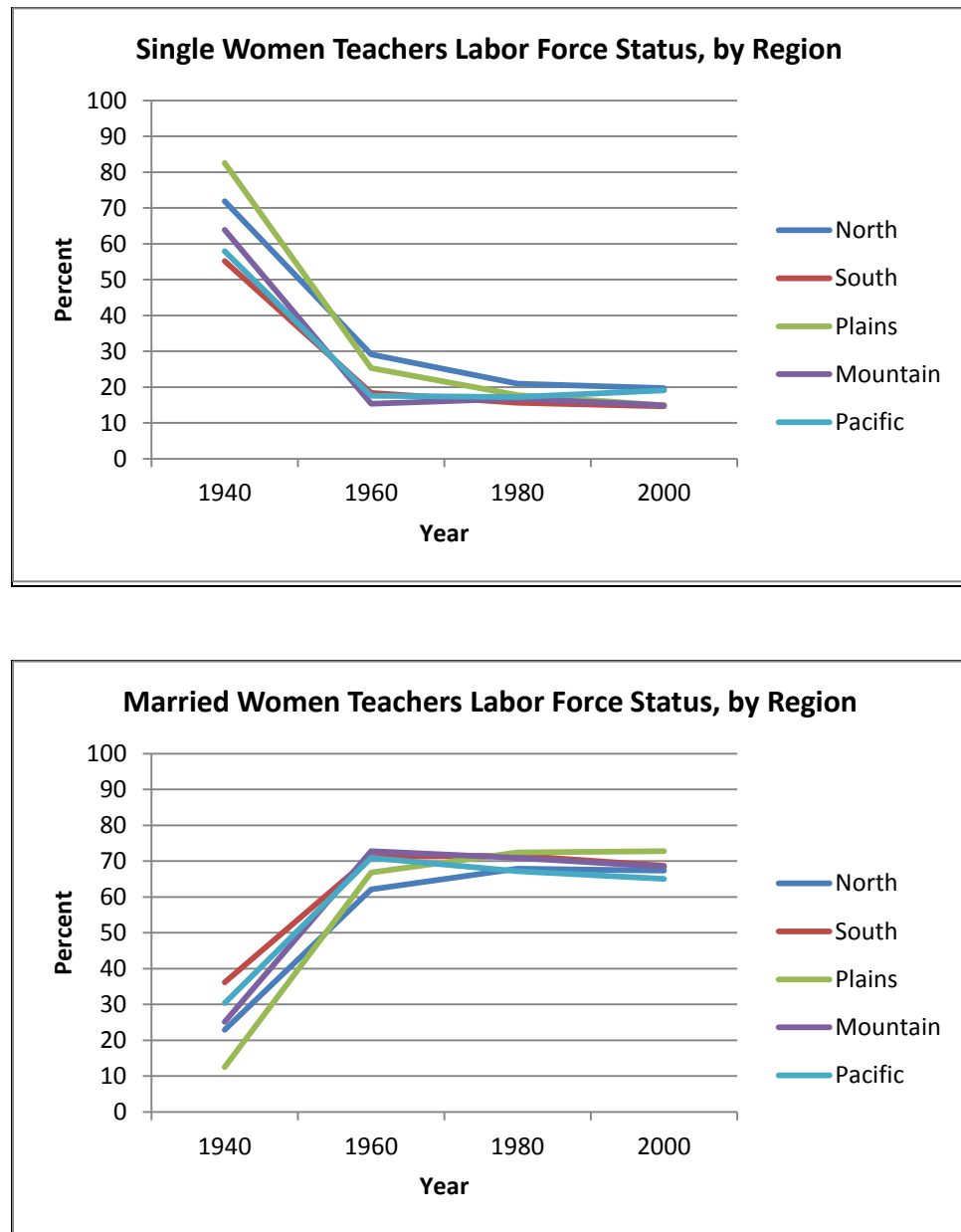
** Percentages are weighted.

Examining these trends of age structure and marital status by geographic region illustrates a contrary story to Perlmann and Margo's (2001) and Rury's (1989) research. Whereas they describe how teaching became "women's work" at different rates in the different regions of the United States, particularly comparing the North and South in the late nineteenth and early twentieth century, during the second half of the twentieth century, there was very little variation between the different geographic regions. Nationwide convergence occurred in regards to the proportion of married women working as teachers. After 1940, across all the geographic regions, women were similarly distributed in the teacher labor force and similar proportions of married women worked as teachers. Figure 2.7 shows the variation in marital status by geographic region. In 1940, there was variance in the proportion of single women teachers, with the majority of women teachers in the Plains being single; 82.5% of teachers in the Plains were single, while in the South, 55.2%, of women teachers were single. By 2000, however, approximately 15% of women teachers in both regions were single. Thus, there is convergence in the rates of single women teachers getting married yet continuing to work as teachers.

Furthermore, Figure 2.8 shows that there was notable variation in the mean age of teachers between the different regions. In 1940, the Plains had the youngest mean age, at 33.03 years, whereas older teachers seemed to be concentrated on the Pacific states, where the mean age was approximately 39.60 years. Over time and across the regions, the mean age of female teachers has not only converged but also increased to approximately 42 years across all regions. Also contributing to the aging of the teacher labor force is the widespread use of the single-salary schedule, which consisted of "steps" which represented years of experience and acquisition of graduate coursework. This was intended to be used as an incentive for teachers to gain graduate education and stay in the profession longer (Stronge, Gareis, and Little, 2006). Thus, the census

data presents a picture of regional convergence and illustrates a formation of a national teacher labor force in the post-World War II era.

Figure 2.7: Distribution of Single and Married Women Teachers across Regions, 1940-2000, IPUMS Sample

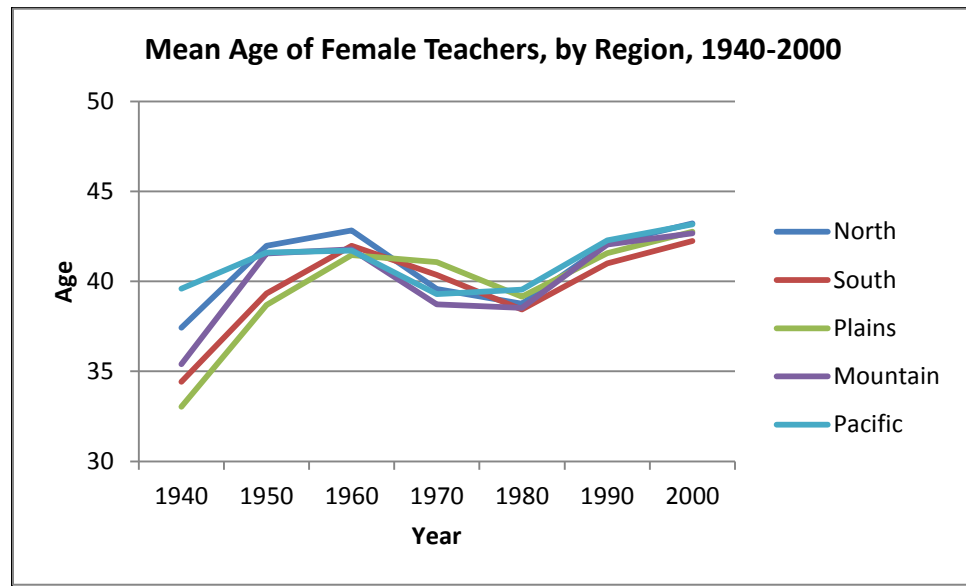


Source: IPUMS – State-Level Data

*Divorced and widowed women are not included.

**Percentages are weighted.

Figure 2.8: Mean Age of Female Teachers, by Region, 1940-2000, IPUMS Sample



Source: IPUMS – State-Level Data

Extensive research on the specific reasons for why women choose teaching as an occupation is sparse; however, educational researchers have identified important factors that contribute to their reasons for choosing this occupation in particular. The historical assumption that teaching is a “natural” and acceptable secondary role for women, who are stereotyped as more nurturing and more interested in children than are men, continues to dominate the popular expectations about teachers and the majority of the research on who enters teacher education programs (Brookhart and Freeman, 1992; Johnson, 1989; Labaree, 2004; Smulyan, 2004). In order to better understand the reasons for why women choose teaching, Smulyan (2004) conducted a qualitative research study at an elite liberal arts college in the Northeast. During the 1991-1992 academic year, she interviewed twenty-eight female second-year college students. During their second-year of college, only two had officially declared education as their academic

majors, whereas by the time the participants graduated, nine had officially graduated as education majors and chose to pursue teaching.

Smulyan (2004) reported that through interviews she learned that the female college students accepted the traditional values of teaching being “women’s work;” however, by teaching the future generation, these young women hoped to change the future generations’ beliefs in regards to labeling teaching as “women’s work.” Along the same lines, Johnson and Birkeland (2003) interviewed fifty new teachers in 1999 Massachusetts in order to understand the reasons for why they chose teaching as an occupation. Besides what Johnson and Birkeland (2003) identified as a female tendency to choose to work with children, in comparison to men, who are less likely to choose occupations that allow them to interact with children, the female teachers also stated that flexibility of time and the friendly work environments in schools were major attractions to the occupation. Furthermore, many of the teachers who were also mothers stated that the teaching profession allowed them to be on a similar schedule as their children (Johnson and Birkeland, 2003). Flyer and Rosen (1997) also found that, for female teachers, the flexibility and the ability to enter, leave, and re-enter the occupation was a fairly common practice and did not have detrimental consequences, especially on their pay levels. Smulyan’s (2004), Johnson and Birkeland’s (2003), and Flyer and Rosen’s (1997) research studies point to the flexibility of time as a major attraction that draws more females, who are more likely than men to juggle care for children, home, and aging parents.

Changes in American Teachers' Education Profiles

[T]he history of twentieth-century teacher training can be seen as a series of institutional displacements, with normal schools becoming state teacher colleges, then multipurpose liberal arts colleges, and now, in many instances, regional state universities (Johnson, 1989, p. 243).

While American teachers received a type of professional preparation and training, the context and length of this training varied considerably throughout the nineteenth and early twentieth century. The major change that occurred during the second half of the twentieth century was that teacher education departments found a stable home in the multipurpose university setting. As Fraser (2007) explains, by 1965 the last state teachers' college became a regional state university, which indicated a shift from an institution with a primary focus on preparing and training teachers to an institution with many functions and responsibilities, only one of which was to prepare and train teachers. These new multipurpose universities served a wide range of students, offering many different programs of study. This was a significant change in regards to teacher education because throughout the nineteenth century and early twentieth century, large numbers of the nation's elementary teachers, and many high school teachers, had been educated in institutions dedicated exclusively to the preparation of teachers. In the second half of the twentieth century, such an education for teachers ceased to exist (Fraser, 2007; Ogren, 2005).

The evolution of teacher preparation programs and their eventual home in the university setting can be explained by institutional isomorphism, the process by which organizations within a field become increasingly similar (DiMaggio and Powell, 1983). During the nineteenth century, state normal schools were created with the sole responsibility of preparing and training

teachers. In fact, the creation of state normal schools was one component of the common school reform movement (Fraser, 2007; Urban and Wagoner, Jr., 2009), which created a new standardized American public school system. Common school reformers argued that full-time teachers should be professionally trained because public education was not only an opportunity for individual young Americans but that, as a nation, America had an obligation to prepare youth for the working world (Herbst, 1989). They needed a common experience of preparation and training that was specific to teaching, and this was different from classical education because teacher preparation needed to incorporate subject-matter knowledge with pedagogical training (Herbst, 1989). In addition, common school reformers wanted teaching to occupy more of the year; therefore it became less attractive to men who were looking for independence and temporary work (Ogren, 2005). As a result, most normal school students were young, single lower-middle class women who wanted to work. Thus, as discussed in the earlier portion of this chapter, this standardization of American public schools created a female-dominated occupation (Rury, 1989). DiMaggio and Powell (1983) stated, “coercive isomorphism results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function,” (p. 150). The process of coercive isomorphism supports the creation of the organization, state normal schools. In order to meet the government requirement, provide an education to all students, state normal schools were created in order to professionally train teachers.

Although the purpose of state normal schools was to provide their students with the necessary knowledge and practical training to become competent and qualified teachers, state normal schools across the nation did not share common admission requirements. Moreover, the years spent learning at state normal schools varied considerably. Some state normal schools

were comparable to a high school, and so these normal schools required, at most, completion of a common school curriculum for admission. Other state normal schools required a high school diploma for admission and offered courses that were equivalent to those at most of the nation's colleges. Between 1870 and 1920, most of the 200 normal schools in the United States admitted students who had previously completed anywhere between the 8th grade and 12th grade education (Fraser, 2007). Even more confusingly, a state normal school could offer one year of training or up to five years of training. Thus, during the nineteenth century there was not a consistent level of education required to be a teacher (Fraser, 2007).

In the early twentieth century, the American high school transformed American teacher education and preparation. State normal schools transformed into postsecondary teacher colleges and required a high school diploma for admission. Fraser (2007) stated,

The rapid spread of high schools impacted teacher preparation in many ways. As the high schools became more and more available in more and more cities but also in small towns, normal schools were able to move from secondary to postsecondary institutions by requiring what they never could have expected before, a high school diploma for admission, (Fraser, 2007, pp. 147).

In addition, the growth of high schools changed the ways in which teachers were prepared and trained. Teaching had become a differentiated occupation with different training requirements for elementary school teachers and secondary school teachers. During the 1920s, all state normal schools transformed into state teacher colleges and only admitted students with high school diplomas. By 1940, the last normal school had transformed into a state teachers college, and by 1965, the last of state teachers college became a regional state university. Thus, beginning in the 1960s, a bachelor's degree became a *requirement* to become a teacher.

Although state teachers colleges awarded bachelor's degrees, the bachelor's degree was not a requirement; therefore prior to the 1960s a bachelor's degree was not a requirement to becoming a teacher. During the nineteenth century, the lack of a college degree did not pose an impediment to successful teaching; however by the middle of the twentieth century, a college degree became a requirement. These increased requirements for teachers paralleled the increases in educational attainment and demand for education by the students attending schools and college/universities (Fraser, 2007). Table 2.3 summarizes the increasing levels of education held by American teachers once a four-year college degree became a requirement. Note that the table shows the highest degree earned. As more teachers earned graduate degrees, the proportion for whom the bachelor's degree was the highest qualification decreased over time. Although no state actually required a master's degree in order to begin teaching, beginning in the 1980s, more than fifty percent of American teachers obtained the degree (Fraser, 2007).

The process of mimetic isomorphism describes the standardization of requirements for becoming a teacher. DiMaggio and Powell (1983) explained, "When organizational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic uncertainty, organizations may model themselves on other organizations," (p. 151). In the early twentieth century, the transformation of state normal schools into postsecondary teacher colleges and the requirement of a high school diploma for admission shows that because standards for becoming a teacher were not equal prior to the creation of high school, the postsecondary teacher colleges were created and imitated the standard created by a high school, except the standard requirement was a high school diploma for admission. As the various organizations within the field created requirements, this pressured other organizations within the field to comply (DiMaggio and Powell, 1983). Different organizations within education, the

government, common schools, state normal schools, high schools, and college and universities, all pushed and pulled each other to adopt standards.

Table 2.4: Proportion of All Teachers by Highest Degree Level, 1961-2001

Year/Highest Degree Level	Bachelor's Degree	Master's and/or Specialist Degree
1961	61.9	23.1
1971	69.6	27.1
1981	50.1	49.3
1991	46.3	52.6
2001	43.1	56.0

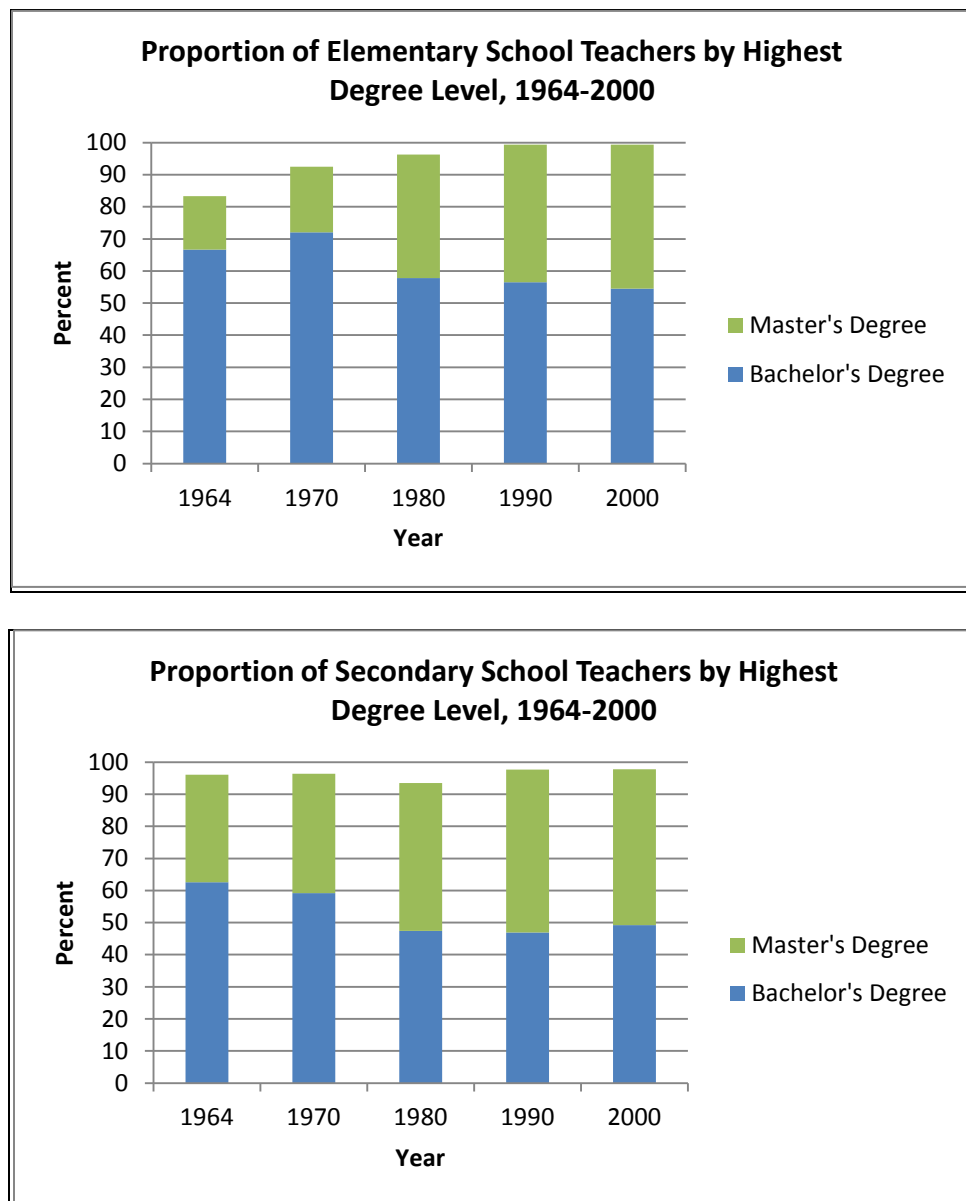
Source: U.S. National Center for Educational Statistics, Digest of Education Statistics: 2009, Table 69.

Also, during the 1980s, the career ladder model began to grow in popularity, which incorporated the basic structure of the single-salary schedule but made it more flexible. Career ladder models established a series of “steps” for teachers to achieve, usually designated by titles such as “teacher leader,” “expert teacher,” and “master teacher.” Teachers moved up on the career ladder by demonstrating professional growth and differentiated roles based on a set of specific criteria. In most career ladder models, movement up the “steps” results not only in increased salary, but also opportunities for involvement in curriculum development, professional development, and other leadership opportunities (Strong, Gareis, and Little, 2006).

Using data from the National Center of Education Statistics (NCES), Figure 2.9 shows the proportion of elementary and secondary teachers by highest degree level. By 1964, 46 of the 50 states required a four-year college degree for all new teachers (Fraser, 2007). In 1964, two-thirds of elementary school teachers, 66.7%, held a bachelor's degree as their highest degree and one-third, 33.5%, of secondary school teachers held a master's degree; by 2000, approximately

half of elementary school and secondary school teachers held one. These national statistics illustrate that as career ladder models were established in the field of education, teachers had a greater incentive to obtain higher education qualifications and stay in the profession longer (gain years of experience) in order to increase their salary as well as autonomy in their practice.

Figure 2.9: Proportion of Elementary and Secondary School Teachers by Highest Degree Level, 1964-2000

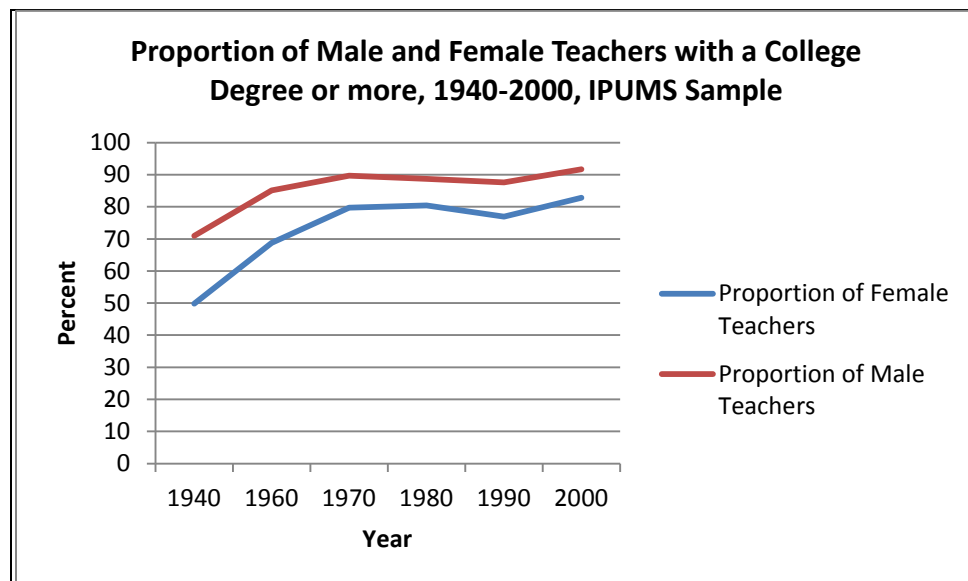


Source: U.S. Census Bureau, Statistical Abstract of the United States, 1971, 1981, 1991, and 2002.

Note: 1990 and 2000 percentages include those with Master's and Education Specialist Degrees.

Overall, it is clear that American teachers increased their education attainment levels over the second half of the twentieth century. IPUMS census data reveals gender differences within this trend. Figure 2.10 shows the proportions of male and female teachers who had more than a bachelor's degree. Although the proportion of males who had more than a college degree has consistently been higher, the gap between the proportion of male and female teachers with advanced degrees has decreased over time. In 1940, 49.8% of female teachers and 71% of male teachers had more than a college degree; by 2000, 82.8% of female teachers and 91.7% of male teachers had this level of education.

Figure 2.10: Proportion of Male and Female Teachers with a College Degree or More, 1940-2000, IPUMS Sample



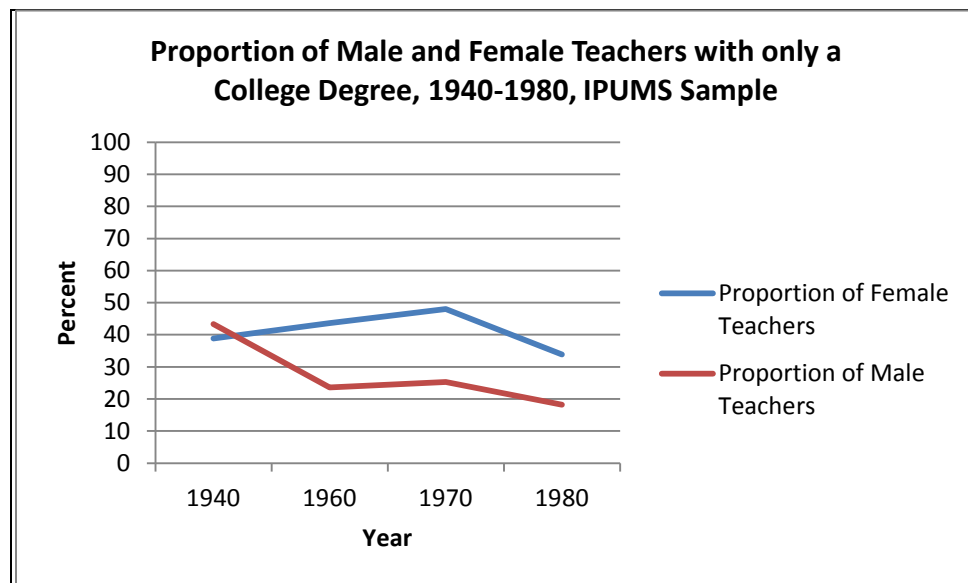
Source: IPUMS Source: IPUMS – Individual-Level Data
*Percentages are weighted

Figures 2.11 and 2.12 shows the different proportions of male and female teachers who had only a college degree and those who had more than a college degree over time. Figure 2.11

shows that, between 1940 and 1960, the proportion of male teachers who only had a college degree decreased by approximately 20% from 43.3% to 23.6%, whereas the proportion of female teachers with only a college degree steadily increased over the same period from 38.8% to 43.6%. On the other hand, Figure 2.12 shows the proportion of male teachers with more than college degree increased by 35% between 1940 and 1960 from 27.5% to 57.9%.

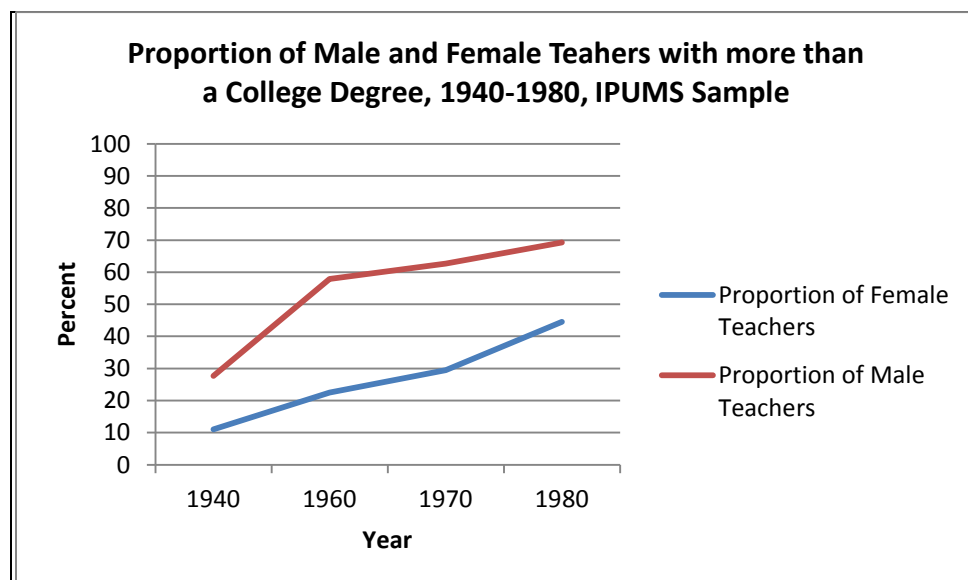
The increase in the proportion of men having graduate degrees illustrates that as the school system as well as salaries grew, men were more inclined to obtain advanced degrees in education (Grant and Murray, 1999). For the most part, teaching offers no promotions, and pay raises are based exclusively on years of service or earned academic degrees. After 1970, both the proportion of female teachers and male teachers with more than a college degree, master's and doctorate degrees in education, increased. The higher level degrees in education are necessary for advancement to education administration positions, which are especially appealing to men as leadership opportunities with higher salaries (Grant and Murray, 1999). In regards to teaching, the graduate degrees offered opportunities to teach in the higher level grades. As Strober and Tyack (1980) explained, the bureaucratized school system created a gender segmented market within the institution with men managing and women teaching.

Figure 2.11: Proportion of Male and Female Teachers with only a College Degree, 1940-1980, IPUMS Sample



Source: IPUMS Source: IPUMS – Individual-Level Data
 *Percentages are weighted

Figure 2.12: Proportion of Male and Female Teachers with more than a College Degree, 1940-1980, IPUMS Sample



Source: IPUMS Source: IPUMS – Individual-Level Data
 *Percentages are weighted

As Perlman and Margo (2001) and Rury (1989) clearly explained, due to increasing student enrollments in the northeastern industrial cities, the demand for full-time teachers increased. As a result, teaching training programs proliferated in these cities compared to other cities. Therefore, as has previously been stated, education attainment levels of teachers varied considerably; thus, examining the regional variations in American teachers' education attainment levels is important.

Figure 2.13 shows the proportion of teachers with less than a college degree for the different regions of the United States. The decrease across all regions in the proportion of teachers who did not have a college degree parallels the process of institutional isomorphism in teacher preparation programs. In 1940, the last normal school had become a state teachers college and then in 1964, all state teachers' colleges had become regional state universities. Thus, in the post-1960s era, all new teachers who were hired, were required to have a four-year university degree. In 1940, almost 60% -- 57.2% -- of teachers in the Plains did not have at least a college degree, whereas less than 50% of teachers in the North, South, Mountain, and Pacific states did not have a college degree. However by 1980, when teachers were prepared in regional state four-year universities, less than a quarter of teachers across all regions did not have a college degree. In the North, 15% of teachers had less than a college degree, and in the South, about 23% of teachers had less than a college degree.

Figure 2.13: Proportion of Teachers with Less than a College Degree by Region, 1940-1980, IPUMS Sample

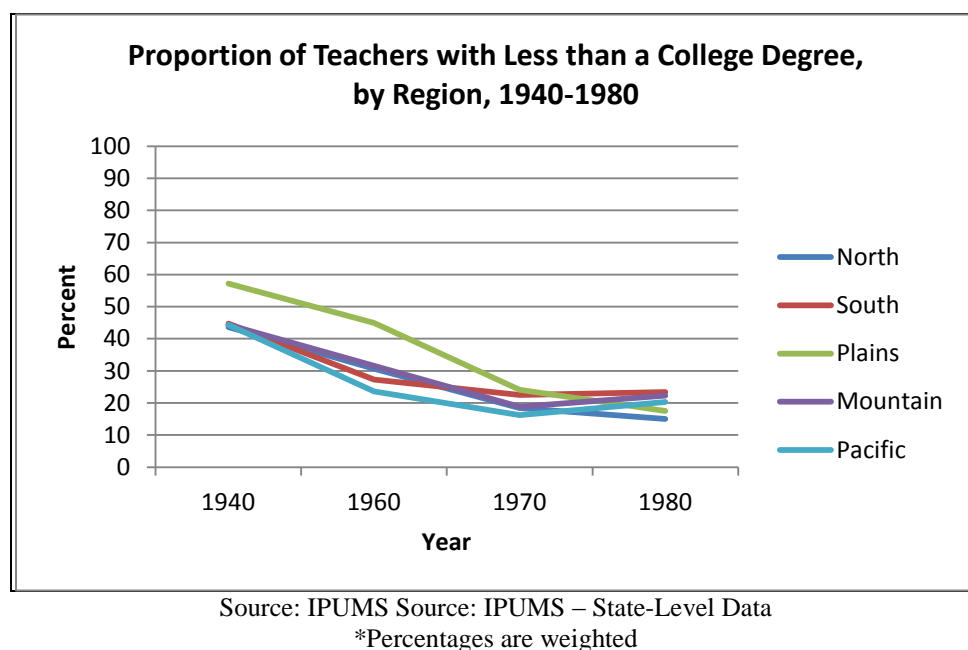
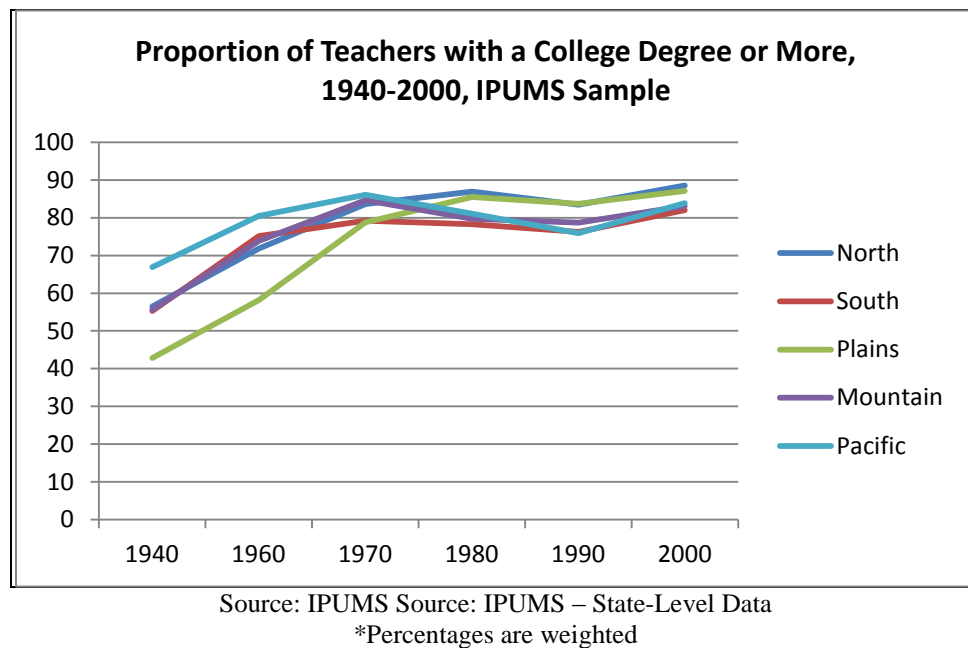


Figure 2.14 shows the proportion of teachers who obtained a four-year college degree or more by U.S. geographic region over the 1940 to 2000 time period. This figure illustrates a convergence across all geographic regions. Although in 1940 there was notable variation across the different regions in the education attainment levels of American teachers, with 66.9% of teachers in the Pacific states having a college degree or more in 1940 and only 42.8% of teachers in the Plains having the same level of education, by the early twenty-first century, between 80% and 90% of teachers had a college degree or more across all regions of the United States. It is important to remember that given the length of many professional careers, it takes decades before a requirement to enter a profession becomes universal within a profession. In the early 1960s, when every state had already required a college degree, most for a decade or more, a notable proportion of the nation's teachers still did not have a degree (Fraser, 2007).

Figure 2.14: Proportion of Teachers with a College Degree or More, by U.S. Region, 1940-2000, IPUMS Sample



2.4: Concluding Remarks

The emergence of a national teacher labor force in the second half of the twentieth century can be attributed to the process of institutional isomorphism. The professionalization of teaching, creating national standards to become a teacher (credentials) and the subsequent creation of a salary-schedule, helped lead to the eventual homogeneity in the characteristics of teachers across all regions. This illustrates a story of regional convergence, contrary to the North-South differences described by Perlmann and Margo (2001) and Rury (1989) in an earlier era. Although, the findings of this chapter support the process of institutional isomorphism, it cannot be ignored that many other changes were going on during the post-World War II period. Industrialization in the South and migration West also created increased demand for teachers and

possibly due to the nature of the work, more women rather than men may have chosen teaching as an occupation.

The process of and continued feminization of teaching occurred because of two parallel trends. While a transformation of social values took place, opening new positions for women in the labor market, conventional gender roles remained unchanged and intact. The supervision and control of women's work remained in the hands of men, who worked as principals and supervisors, while the work of women teachers was limited to the space of the classroom.

How does the feminization of teaching affect the culture of schools across the United States? The feminization of teaching, without a doubt, influences the socialization of children, and therefore has an effect on the equality of opportunities between men and women (Cortina and Roman, 2006). In some cases, the dominance of women teachers in schools creates a feminized atmosphere that gives rise to gender patterns that affect both girls and boys (Cammack and Phillips, 2002; Cortina and Roman, 2006). To the extent that women's work is identified with teaching at the elementary level, men are not considered socially and/or emotionally suitable to perform or pursue this work. Boys, as a result, exclude themselves from teaching, particularly elementary teaching, as an option and channel their professional aspirations to other directions (Cammack and Phillips, 2002; Cortina and Roman, 2006; Franken, 1983). In contrast, the secondary school setting is an atmosphere not as heavily charged with femininity, with competitive sports teams and relatively more male teachers. These patterns are reflected once again in the job market, with boys more likely to express interest in secondary teaching than in elementary teaching. In 2009, the proportion of elementary and middle school teachers who were male was 18.1%, while the proportion of secondary school teachers who were male was 45.1% (Bureau of Labor Statistics, 2009). The attainment of equal opportunities can be achieved

only be eliminating the rigid gender hierarchies that are in the very air that young children breathe inside schools or by placing women and men teachers at an equal rank.

Surprisingly, the success experienced by girls in schools does not correspond to their workforce participation or to the managerial positions they occupy outside the school, where they are confronted with the social atmosphere that relegates them to subordinate positions (Oakley, 2000). In 2004, women held half of all management and professional occupations. However, women's share of specific occupations within these broad categories varied. For example, 14% of architects and engineers and 29% of physicians and surgeons were women. In contrast, 86% of paralegals and legal assistants and 89% of dieticians and nutritionists were women (U.S. Census Bureau, Statistical Abstract, 2005). Thus, while school presents itself as a "promised land" for women, the labor market moves them toward lower-ranked positions, which are traditionally considered feminine and compatible with their maternal role.

Today, when there is presumably no impediment that bars a woman from choosing any profession she wishes, the fact that women continue to select fields, such as teaching, points to a significant degree of self-exclusion. Moreover, the fact that men identify a stigma of working in a female-dominated occupation because it is considered a step down in status is another form of self-exclusion (Williams, 1992). In spite of the continued or consistent feminization of teaching, the issue of gender is not addressed in many programs that prepare new teachers for the profession; nor is the question of how the cultural construction of teaching as a gendered occupation influences the identity of teachers in a classroom (Cammack and Phillips, 2002; Cortina and Roman, 2006; Marsh, Martin, and Cheng, 2008; Skelton, 2006; Williams, 1992).

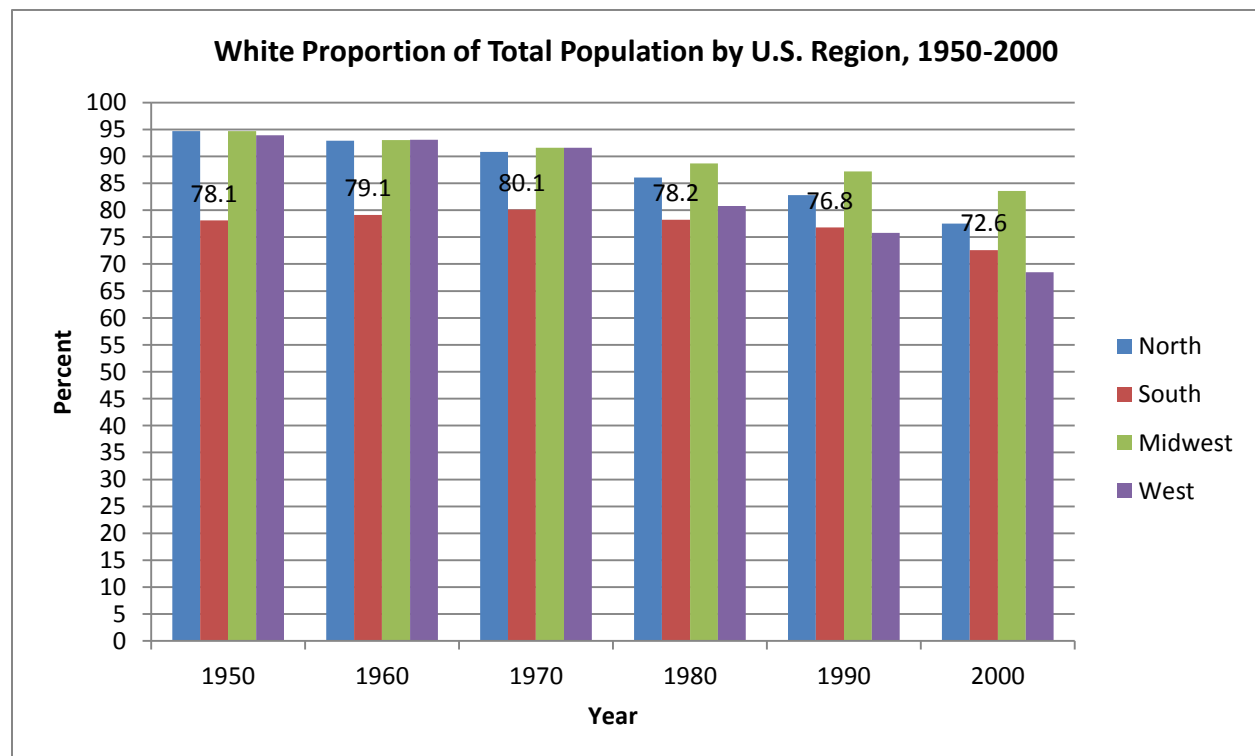
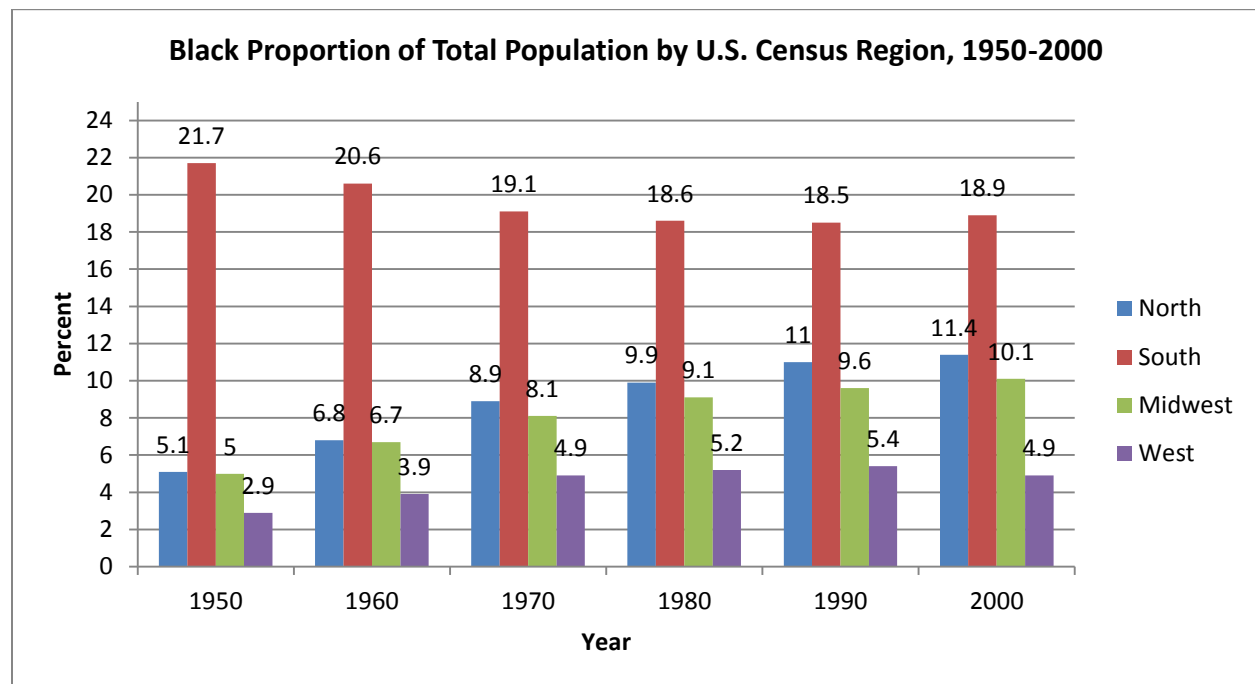
CHAPTER THREE

BLACK TEACHERS EMPLOYMENT IN THE SOUTH: A FIXED-EFFECTS REGRESSION ANALYSIS, 1940-1980

3.1: The Concentration of Blacks in the South

Historically, teaching has been the major occupational choice of college-educated blacks in America (Cole, 1986; Fairclough, 2007; Graham, 1987; King, 1993; Rury, 1989). By 1950, teaching accounted for nearly fifty percent of all black professional workers, compared to less than twenty-five percent of all white professional workers (Cole, 1986). The concentration of blacks in teaching in the United States was primarily due to the segregated school system that provided a closed market and due to the limited number of other occupations open to blacks. The majority of black teachers worked in the South, where most of the black population lived. Figure 3.1 shows that in 1950, 21.7% -- almost a quarter -- of the population in the South was black, whereas five or less than five percent of the population in the other regions, North, Midwest, and West, was black. By 2000, 18.9% of the population in the South was black whereas the proportion of the population that was black in the North, Midwest, and West doubled between 1950 and 2000.

Figure 3.1: Black and White Proportion of the Total Population by U.S. Census Region, 1950-2000



** Alaska and Hawaii excluded

Source: U.S. Census Bureau. Statistical Abstracts of the United States, 1951, 1961, 1971, 1981, 1991, 2001.

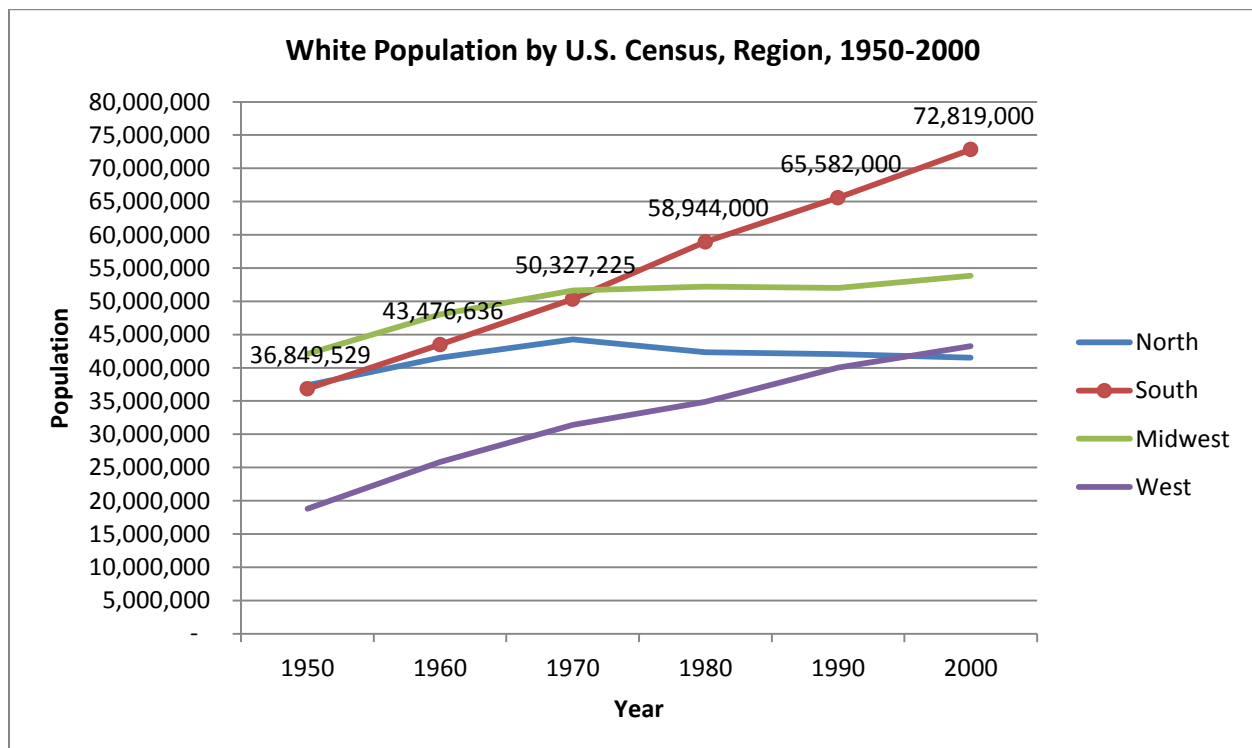
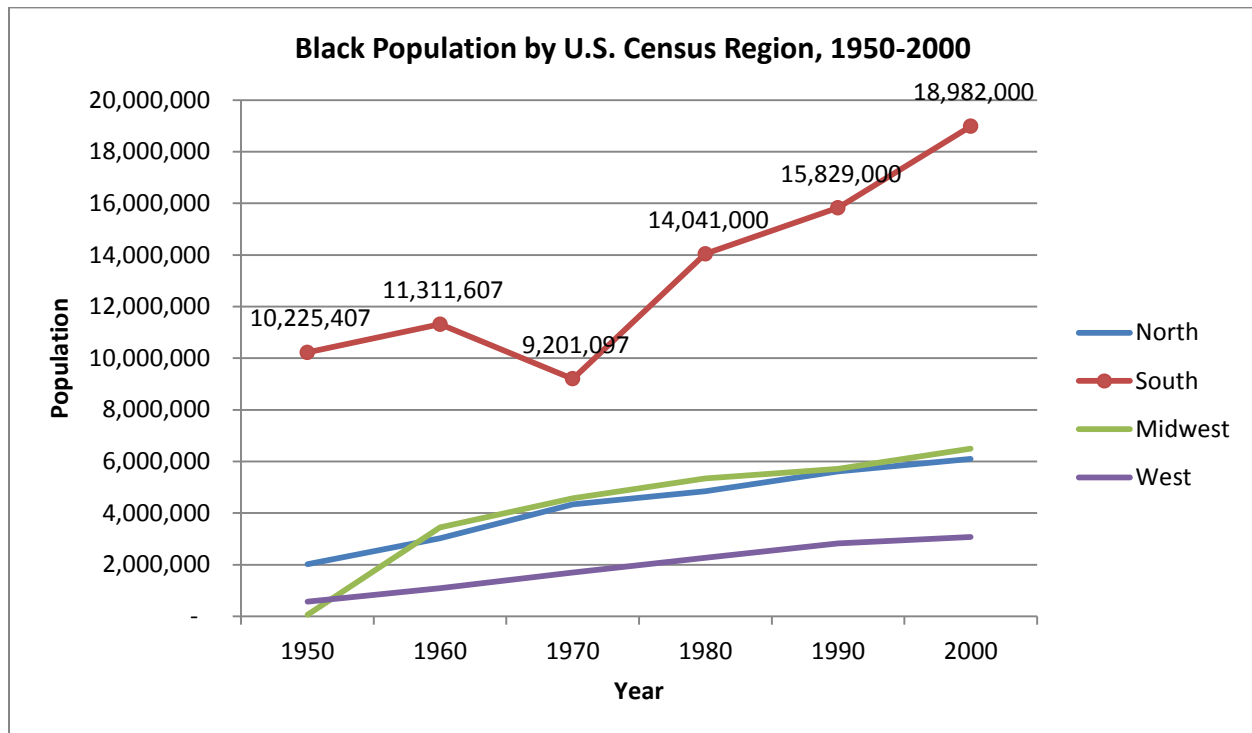
Although Figure 3.1 shows that the proportion of the blacks in the South decreased throughout the second half of the twentieth century as the proportion of blacks in the other regions increased, Figure 3.2 illustrates the growing black and white population in the South over the second half of the twentieth century. The absolute number of blacks who resided in the South increased, particularly in the post-Civil Rights era. In fact, Figure 3.2 shows that the absolute number of blacks that lived in the South increased from approximately nine million in 1970 to nineteen million in 2000. Also, the absolute number of whites that lived in the South steadily increased from approximately thirty-seven million to seventy-three million between 1950 and 2000.

Figure 3.2 also illustrates the decreases and increases in the absolute numbers of blacks living in the other geographic regions (North, Midwest, and West) between 1950 and 2000. Tolnay (1998 and 2003) explained that prior to World War II, southern blacks who migrated to non-South regions responded to the relatively higher levels of economic growth and prosperity in these regions compared to the South. Many blacks migrated to meet the demands for labor in the industrial plants of the northern urban locations. The assurance of work in the northern industrializing towns and cities, and subsequently the more lucrative financial opportunities, was one of the key factors associated with the early twentieth century “Great Migration.” The South was a predominantly agricultural-based economy and southerners, mainly black southerners, experienced lower living standards relative to their counterparts in the North (Johnson and Campbell, 1981; McHugh, 1987; Tolnay, 1998 and 2003). Furthermore, the relatively harsher racial climate of the South also added to the reasons for blacks to leave the South during this period (Johnson and Campbell, 1981; Goodwin, 1990; McHugh, 1987; Lichter, 1985, 1989; Tolnay, 2003). The “Great Migration” began to fade in the 1960s and was virtually over by the

1970s. Figure 3.2 shows that between 1950 and 1970 the absolute number of the black population in the South decreased from ten million to nine million, while the absolute number of the black population increased in the three other regions.

In the late 1960s and early 1970s, the rate of migration to the North declined while the migration to the South increased. Increased southern economic growth combined with an improved racial climate attracted blacks back to the South. Historically, the South lagged behind the North and Midwest in industrialization and income. The shift of blacks migrating back to the South in the post-1970 period reflected the restructuring of American economy that led to industrial and other economic expansions in the South as well as improved social conditions for blacks that resulted from the Civil Rights Movement (Johnson and Campbell, 1981; Goodwin, 1990; McHugh, 1987; Frey, 2004; Fuguitt, Fulton, and Beale, 2001). Overall, regional migration patterns have been connected to changes in economic growth. The South, as a whole region, increased its population during the second half of the twentieth century and much of this is explained by the increased economic growth of the region. Figure 3.2 shows that in the post-1970 period, the population of blacks and whites grew. During the 1970s alone, the black population grew by approximately five million people.

Figure 3.2: Black and White Population by U.S. Census Region, 1950-2000



** Alaska and Hawaii excluded

Source: U.S. Census Bureau. Statistical Abstracts of the United States, 1951, 1961, 1971, 1981, 1991, 2001.

With the increased migration (back) to the South, the school-age population also increased. The post-World War II period marked a time of rapid expansion in school participation, particularly in secondary enrollments (Goldin and Katz, 2008; Rury, 2007). Using state-level census data, Rury (2007) showed that the South was a geographic focal point of enrollment expansion in the postwar era. Table 3.1 shows that the number of black secondary school students increased between 1960 and 1980, the period when migration to the South rapidly increased. Even though the proportion of black secondary students stayed relatively the same and the proportion of white secondary students decreased, the absolute number of black and white secondary students increased over this twenty year span, particularly during the 1970s. As the South's economic base transitioned from an agricultural- to a manufacturing-based economy, economic expansion of the region increased the total population, as well as school enrollments (Rury, 2007).

Table 3.1: Percent of Secondary Students in the South by Race, 1960-1980, IPUMS Sample

Census Year/Race	White*	Black*	Total	Percent** Black	Percent** White
1960	60,508	17,566	78,075	22.5	77.5
1970	58,934	18,109	79,427	22.8	74.2
1980	84,045	28,641	117,382	24.4	71.6

Source: IPUMS

*Number reported refers to n (sample size)

**Percentages are weighted

In 1950, Rury (1989) reported that blacks made up more than twenty percent of the teaching force in the South at a time when they constituted over twenty percent of the region's population. However by the late 1960s, as all-black schools closed and white schools began accepting black students to meet school-desegregation mandates, thousands of Southern black

teachers and principals were dismissed from their duties (Cole, 1986; Ethridge, 1979; Fairclough, 2000, 2007; Lyons and Chesley, 2004; King, 1993; Rury, 1989). Table 3.2 shows that the numbers of black and white teachers increased over the second half of the twentieth century. However, after *Brown v. Board of Education* (1954) and the Civil Rights Act of 1964 the proportion of black teachers decreased from 23.1%, in 1950 to 15.1% by 1970. Figure 3.3 illustrates the trend in the proportion of black and white teachers in the South.

Table 3.2: Percent of Teachers in the South by Race, 1950-2000, IPUMS Sample

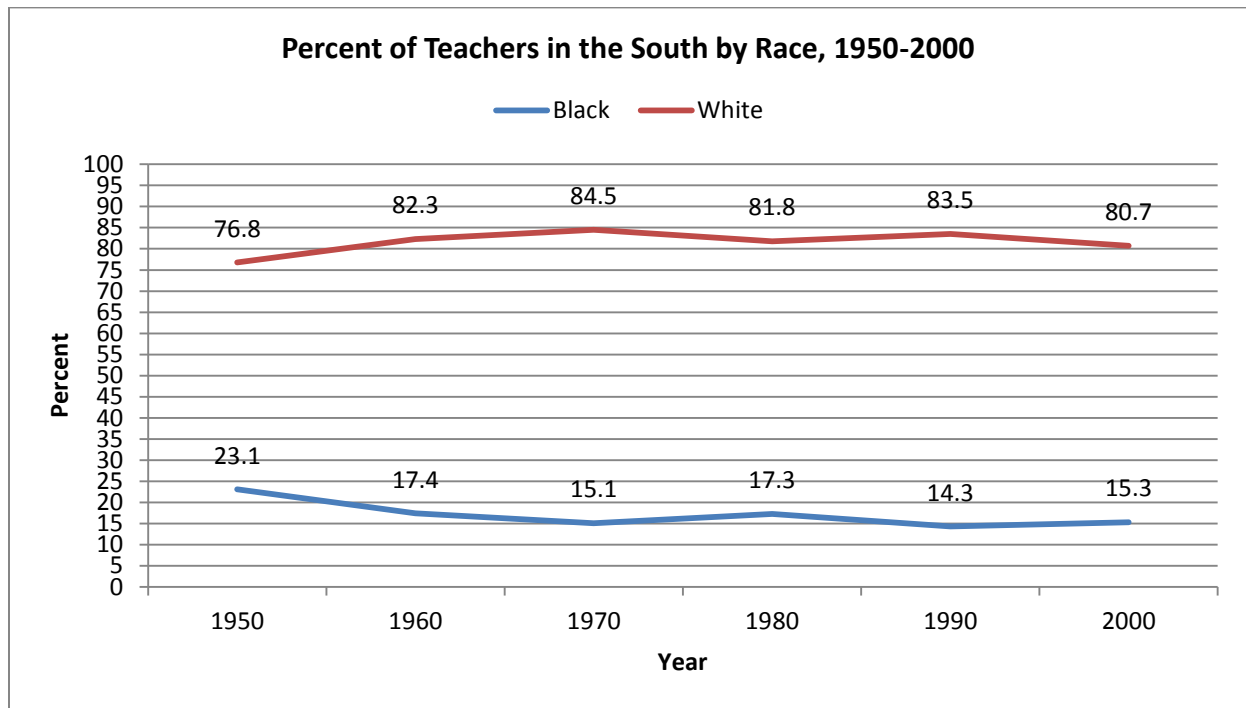
Census Year/Race	White[*]	Black[*]	Total	Percent^{**} Black	Percent^{**} White
1950	2,821	849	3,672	23.1	76.8
1960	5,343	1,512	6,855	17.4	82.3
1970	9,155	2,549	11,664	15.1	84.5
1980	11,959	3,077	15,036	17.3	81.8
1990	15,468	2,639	18,514	14.3	83.5
2000	17,116	3,245	21,207	15.3	80.7

Source: IPUMS

^{*}Number reported refers to n (sample size)

^{**}Percentages are weighted

Figure 3.3: Percent of Teachers in the South by Race, 1950-2000, IPUMS Sample



Source: IPUMS
** Percentages are weighted

Research studies that focus on geographic inequality note the importance of where individuals and resources are located and how differences between geographic regions affect social and economic development. Therefore, social scientists increasingly view geographic region along with race and ethnicity, socioeconomic status, gender, and age as important factors in differential access to opportunities and resources in the United States (Card and Krueger, 1992; Kim, 2008; Lobao et al., 2007). Since black teachers were a significant educational resource, specifically in the segregated school system of the South, studying the employment profile of black teachers in this region after desegregation explores major differences across regional spaces; and within a particular geographic region.

Previous research on black teachers has mainly addressed two areas: 1) their positive influence on and commitment to their (black) students due to their important positions as leaders of their (black) communities; and 2) their dismissal and demotion experiences after desegregation (Fairclough, 2007; Foster, 1997; Lyons and Chesley, 2004; Siddle Walker, 1996, 2001). In addition, this previous research on desegregation and its effects on black teachers has primarily used qualitative research methods (e.g. interviews, observations), and in addition, has focused on the experiences of teachers, students, and communities in particular school districts or states. For example, Siddle Walker's (1996) study of North Carolina's Caswell County Training School is a historical analysis of members of a specific segregated school in the state and their relationship with the black community. Foster's (1997) study of black teachers highlights the perspectives of a select group of black teachers from the segregated schooling era, specifically examining their views on their place in the education of black students.

While these studies provide important contributions to the research that discusses black American teachers, this chapter examines the period after desegregation within the South in order to identify specific states in which black teachers, and subsequently black students, were most affected by desegregation. The South consists of sixteen states, but, due to their differing treatment of blacks (Falk and Rankin, 1992) and, as a result, their different rates of integration, the region can be divided into three sub-regions: Deep South (Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas), Upper South (Arkansas, North Carolina, Tennessee, and Virginia), and Border States (Delaware, Kentucky, Maryland, Oklahoma, and West Virginia) (Fairclough, 2007). Specifically, this chapter's research question is: *In which Southern states were fewer black students taught by black teachers, and how did this change between 1940 and 1980?* A one percent sample of all teachers was acquired from the Integrated

Public Use Microdata Sample (IPUMS) for the census years 1940, 1960, 1970, and 1980; 1940 is the comparison year because it is when a dual school system existed in the South, and 1960 is the year after *Brown* (1954) decision, and 1970, and 1980 are the years after the Civil Rights Act of 1964, when desegregation efforts were mandated and eventually implemented. This chapter utilizes quantitative methods to explain the experience of black teachers in the South – across the region, and in particular highlight the relationship between race, place (state), and employment status.

3.3: Literature Review

Historically, differences between rural, urban, and suburban areas, differences between states, and differences between regions have been the focus of the geographical inequality literature in education. Much of the current education literature examines the differential access to high-quality education among rural, urban and suburban students (see, for example, Jacob, 2007; Lankford et al., 2002; Schwartz and Stiefel, 2004) and some studies address the schooling differences and subsequent outcomes between Americans living and working in the North compared to those living and working in the South (see, for example Goldin and Katz, 2008; Card and Krueger, 1992). The South, historically and in the present day, is an important region to study in regards to schools, teachers, and students due to its racial makeup, racial climate, and history of school segregation.

This chapter's literature review first introduces and briefly explains the research on how geographic areas differ in their labor market structure for black and white workers. The second section of this literature review explains the importance of black teachers in the segregated

schools of the South. The final section of this literature review outlines the existing research on black teachers' experiences of losing their teaching positions or being demoted within the integrated school system after *Brown versus Board of Education* (1954).

Black and White Labor Market Differences and Geographic Region

The idea that geographical area affects labor markets is not new. In the *Wealth of Nations*, Adam Smith noted that people do not move as often or as easily as commodities because their accessibility to the market is in part determined by transportation costs and because a distance of more than a few miles from a market is likely to be associated with higher wage costs (Smith, 1976). Therefore, although labor markets for some occupations are on a national, or even an international scale, labor markets for many occupations are often local in nature (Fernandez and Su, 2004; Killian and Tolbert, 1993; Tigges and Tootle, 1993). Different workers within the same geographical area vary in the degree to which they compete for jobs. Furthermore, the literature on geographical inequality and labor markets focuses on the idea that geographic area is a constraining factor for various workers in the labor market, especially for racial and ethnic minorities (see, for example, Lichter, 1989, Lichter, Fuguitt, and Heaton, 1989; Semyonov et al., 1984; Tigges and Tootle, 1993; Tomaskovic-Devey and Roscigno, 1996). Moreover, research finds that black workers, compared to white workers, experience greater economic disadvantage in geographic areas where blacks comprise a significant proportion, if not the majority, of the population. The dominant explanation given for this racial difference is that it is brought about by the perceived economic competition between black and white workers. Thus, researchers theorize that hostility toward a racial minority group is brought about with an

increase in the relative size of the racial minority (Albrecht et al., 2005; Davis, Jr., 2002; Falk and Rankin, 1992; Fernandez and Su, 2004; Freeman, 1977; Freeman et al., 1973; Killian and Tolbert, 1993; Lichter, 1989, Lichter, Fuguitt, and Heaton, 1985; Semyonov et al., 1984; Tigges and Tootle, 1993; Tomaskovic-Devey and Roscigno, 1996).

Semyonov et al. (1984) used 1970 United States Census data to examine race-linked occupational differentiation across 124 Standard Metropolitan Statistical Areas (SMSAs). From the occupational data, the researchers created five major occupational groups: professional and managerial, clerical and sales, craftsmen (skilled labor), operatives (semi-skilled or unskilled labor), and service labor. Focusing on the male labor market, they found that in geographic areas in which a higher percentage of black males were in the labor force, white males were disproportionately represented in professional and managerial, clerical and sales, and skilled labor occupations, whereas black males were disproportionately represented in semi-skilled, unskilled, and service occupations. Accounting for metropolitan characteristics, the researchers found that the likelihood for white males being overly concentrated in white-collar occupations was greater in the South, while black males' relative likelihood of being in unskilled labor and service occupations was lower in Northern metropolitan areas. In addition, in those metropolitan areas with high concentrations of blacks and where the black median education level was higher, black males were more likely to be in clerical and sales jobs, not professional or managerial jobs, suggesting denial of access (Semyonov et al., 1984). Thus, even when education levels are comparable for black and white men, the social atmosphere of the South relegates black male workers to subordinate positions.

In a related study, Lichter (1989) used 1970, 1975, 1980, and 1985 Current Population Survey (CPS) data to examine the changing levels of rural Southern blacks' employment.

Controlling for human capital and demographic characteristics, he compared this group of black workers to black workers living in the metropolitan South, metropolitan Southern whites, and Northern blacks. Examining both industrial jobs and service occupations, he found that from 1970 to 1985, blacks' unemployment levels were highest in the rural South for both types of employment. He noted that during each CPS year in the rural South, approximately 40% to 50% of blacks were unemployed, could not find a full-time job, or could not earn enough to raise themselves out of poverty, compared to 20% to 30% of blacks in the metropolitan South. He explained that these differences in employment hardships are explained mostly by human capital differences; rural Southern blacks lack the necessary knowledge and skills for economic mobility compared to their counterparts in other settings. Moreover, he found that black females in the rural South experienced the worst employment hardship. Although Lichter, Fuguitt, and Heaton (1989) did not specifically report the industrial jobs and service occupations they examined, in his examination of black and white teachers, Fultz (1995) reports that in the early twentieth century, rural Southern black teachers received less teacher training compared to their rural Southern white counterparts. He reports that the proportion of black teachers with four years of high school or less was highest in the isolated rural South, a geographical space with a significant difference between black and white teachers' education levels and, subsequently, salaries. Compared to black teachers in the Southern metropolitan areas and the North, black teachers in the rural South had particularly low levels of teacher training and experienced the greatest unemployment hardship after desegregation (Fultz, 1995).

It is sufficient, and no doubt an understatement, to conclude that there were significant costs associated with being black and living in the South both before and after desegregation. Examining the former major occupation group for educated blacks, teachers, after *Brown*, this

chapter determines how desegregation affected Southern black teachers in regards to their employment. In addition, the effect of desegregation on white teachers is also explored and explained.

Black Teachers in the Segregated South

Research on segregated schools highlights the poor conditions that black teachers and students endured from the advent of the Freedman schools to the mid-twentieth century (Anderson, 1988; Foster, 1997; Siddle-Walker, 1996). Those conditions included old, poorly maintained buildings, nonworking restrooms, and secondhand books and equipment. The schools were understaffed, and black teachers received less pay than white teachers doing the same type of work. A few studies have documented the strengths of segregated schools. In her detailed study of the a North Carolina segregated school environment, Siddle Walker (1996) explained that when black communities were asked what they thought of their schools, often the answers did not dwell on a comparison of what the white schools had and what the black schools lacked; rather, community members recalled their schools as warm, inviting, and nurturing places. While blacks acknowledged that the conditions were substandard, the school stood as the center of the community. Beauboeuf-LaFontant (1999) explained that the role of the school was to serve as the vehicle to instill impressionable students with pride in acquiring the skills that would give them greater opportunity in their local communities as well as skills and knowledge that they could apply throughout the larger community. Simply, the school was the center of African-American life (Beauboeuf-LaFontant, 1999)

The segregated schools were by no means perfect, but one thing was apparent – the key role that black teachers played. The respect given to teachers reflected the high value that blacks placed upon education. A determination to acquire formal knowledge and skills has been one of the most notable features of the black struggle for equality. In every period of black history in America, blacks knew that learning and literacy were essential to their freedom (Fairclough, 2000, 2007). Black teachers are described as respected leaders within their own communities (Carter, 1989; Jeffries, 1993; Rury, 1989; Siddle-Walker, 1996, 2000, 2001).

Black teachers had a number of responsibilities to the education of their next generation. First, they had the responsibility of improving the physical conditions of the schools. Given the prevalence of decrepit one- and two-teacher rural schools during this period, this responsibility was as important as it was daunting. Second, black teachers were called upon to develop local support for education, especially within the black community and, for some, among local whites as well. Finally, black teachers' role in segregated schools was to foster resilience and a sense of determination in students, parents, and the community. They were particularly aware of skills, strategies, and orientations students needed to thrive in their rural environment. Black teachers in segregated schools were personally invested in the academic, personal, and character development of their students – they fostered new ambitions, aspirations, and motivation (Dingus, 2006; Fairclough, 2000, 2007; Fultz, 1995a, 1995b; Siddle-Walker, 1996, 2000, 2001).

Though black teachers were dedicated, demanding, and took a personal interest in their students, Fultz (1995) noted that during the early twentieth century, black teachers in all-black schools were not as well-trained as their white peers. Using data that was reported in the *Negro Yearbook*, Fultz (1995b) stated that the levels of pre-service training among black teachers was quite low in the early 1900s, and although it improved by the late 1930s, it was still not at the

same levels of white teachers. An average of 35.1% of black teachers had completed four years or more of college in 1940, with proportions ranging from highs of 60.1% in West Virginia to lows of 18.6% and 9.1% in Alabama and Mississippi, respectively (Fultz, 1995b). However, at the other end of the of the pre-service spectrum, an average of 26.2% of black teachers had completed fewer than two years of college, ranging from 3.0% in Texas to 48.7% in Georgia and 84.7% in Mississippi. Thus, state-level differences in the years of training for black teachers were notable. Perkins' (1989) historical essay on black education provided a closer look at the professional activity of black teachers. Her work indicated that black teacher organizations existed throughout the South, some beginning in the 1880s, and that black teacher organizations appeared in all states by 1900. These organizations provided a setting for black teachers to meet and discuss enrollment, student attendance, curriculum and academic content, and salaries (Perkins, 1989). She states that black teachers may not have been highly trained, but they were professionally committed to the education of their students, at least those participated in these organizations.

While in the early twentieth century, black teachers were not as equally prepared as white teachers, Siddle Walker (2001) noted that by the 1960s, black teachers were as well trained as white teachers. Fraser (2007) adds an important note to the history of black teachers' education, criticizing educational historians for overlooking the central role high schools played in preparing teachers for elementary and secondary schools. Major studies on the origins and growth of the American high school (see, for example, Labaree, 1988) "seriously understate the role of the 19th century high school as a teacher preparation institute, which it assuredly was," (Fraser, 2007, p. 81). Fraser asserted that high schools likely trained more teachers than all the nation's normal schools combined. He further explains that the Hampton-Tuskegee model had

the central role of training black teachers in the South. Even though the mission of these institutions was industrial education, these types of institutions also educated and trained black teachers for elementary and secondary schools. Due to these types of schools, many black teachers obtained the needed preparation, and consequently illiteracy was substantially reduced among Southern blacks in only a generation (Fraser, 2007). Although many teachers, especially black teachers, did not fully complete a college education or a post-secondary teaching training program, Fraser (2007) argued that rise and growth of the secondary school, in all its varieties and contexts, was linked directly to the preparation of teachers, especially in the black communities where blacks high schools existed.

**Brown v. Board of Education (1954) and its Effect on the Employment of Black
Teachers in the Desegregated South**

Outside of the South, blacks made up less than two percent of all teachers in 1950, but in the South nearly 20% of the teachers were black (Rury, 1989). The large proportion of black teachers in the South was mostly due to the practice of segregated schooling and the fact that the majority of the national black population lived and worked in the South (Fairclough, 2007). Massive resistance in the South to the *Brown (1954)* decision meant that little desegregation occurred in the region immediately after *Brown*; less than 2% of all black students were attending schools with white students in the early 1960s (Orfield, 2005). Although these black schools were notably poorer than those attended by white students, the black schools did offer an important source of employment to black teachers (Rury, 1989). As a number of studies have noted, the decades following desegregation marked a time of rapid increases of unemployment

among black teachers (Fairclough, 2007; Ethridge, 1979; Fultz, 2004; Hudson and Holmes, 1994; Siddle Walker 1996). Even though many black teachers desired integration because they longed to see the next generation accept one another regardless of race, the closing of black schools negatively affected black teachers. The discontinuation of segregated schools drastically altered the black teacher's position in the community. For about one hundred years, from 1870 to 1954, black teachers instructed the vast majority of black children in all-black schools. Even after the *Brown* (1954) decision, many southern school districts did not comply with the segregation mandates, therefore, many black students continued to be taught by black teachers until 1970 (Orfield, 2005; Orfield and Lee, 2004; Mickelson, 2005). Segregation, whether voluntary or imposed by whites, had created black solidarity and black leadership. Ever since Reconstruction, black teachers acted as community leaders, interracial diplomats, and builders of black institutions. Integration undermined those functions and diminished the relative status of black teachers. For some black teachers, integration brought demotion or dismissal of duties (Fairclough, 2007).

The Supreme Court decision brought about dramatic changes in the existing social order of schools. White administrators, who had in the past practically ignored the internal development of black schools, began to attempt to control them (Orfield, 1969). Sowell (1976) described how a lack of interest in black schools by all-white Boards of Education allowed for wide leeway to black principals and teachers, so long as no problems became evident. Black principals and teachers had the freedom to lead, manage, and instruct in the manners they deemed most appropriate. However after the *Brown* (1954) decision, and even more after the Civil Rights Act of 1964, white school boards and superintendents took control of important personnel decisions, such as hiring, firing, and transfers, in previously all-black schools (Hudson

and Holmes, 1994; Milner and Howard, 2004; Sowell, 1976; Tillman, 2004). As a result, many black teachers reportedly lost their jobs or were demoted, and large numbers of the most competent black teachers were reassigned to schools in the white community, a practice prevalent in the 1960s and 1970s (Fairclough, 2007; Gordon, 2005; Hudson and Holmes, 1994; Irvine, 1989; Milner and Howard, 2004; Shaw, 1996; Tillman, 2004). Black teachers became victims of the success of integration. Orfield (1969) explains that the widespread firing of black teachers was the major consequence of successful Civil Rights group intervention policies in order to facilitate school integration.

Specifically examining black teachers, Freeman (1977) used United States census data to study the relationship between the change in voting rights for blacks and its impact on their political power, which in turn affected the demand for black public school teachers between 1950 and 1970. Freeman (1977) argued that because changes in the black electorate in the South were due largely to “exogenous” national laws, specifically the National Voting Rights Act of 1965, while changes in the North resulted from “exogenous” migration, the experience of the period provides a distinct test of the impact of the major form of political power in public decision making. Given the importance of teaching as a public sector job and black concern with education, some of the increased black voting power in this period could reasonably be expected to be spent on raising demand for black teachers. Using his census data, Freeman conducted a pooled cross-section analysis for the change in number of black teachers between 1960 and 1970 and found that as the relative voting power of blacks increased in the South, as measured by number of black registered voters for each state and year, demand for black teachers increased, offsetting most of the reduction in demand due to desegregation (Freeman, 1977).

The experiences of black teachers, post-desegregation, cannot be thoroughly studied in depth without considering the relationship among black teachers, black students, black communities, and *Brown* (1954). The loss of black teachers in public school contexts affected black students; the implementation of *Brown* (1954) was related to black teacher attrition, black student achievement, and black communities (see, for example, Irvine, 1983; Milner and Howard, 2004). After *Brown* (1954) and even more after the Civil Rights Act of 1964, black teachers were dismissed or demoted and black students were bussed to white schools. By the early 1970s, approximately 92% of Southern schools were desegregated (Orfield, 2005). To accomplish the goal of desegregation, separate racially defined school systems were converted to unitary systems in which the schools were not racially identifiable. The South ultimately became the most integrated region by the 1980s. Frey (2004) reported that seven of the ten states that experienced the largest gains in the number of black migrants between 1970 and 1980 were southern states, which indicates the region's growth. Thus, the number of black students increased and white students in the South began to attend schools with far higher proportions of black classmates than did whites in any other region (Orfield, 2005).

Many factors explain the delay between *Brown* (1954), and any meaningful desegregation, which did not occur until after the Civil Rights Act of 1964. Efforts to prevent *Brown* (1954) had to be defeated. Title VI of the Civil Rights Act (1964), which tied local receipt of federal funds to agreement to eliminate segregation, played a crucial role, as did court action, which began intensely in 1968 in the cases such as *Green v. New Kent County*, *Alexander v. Holmes*, and *Swann v. Charlotte-Mecklenburg*. By the 1970s, the nation finally saw substantial progress toward desegregation. Nineteen sixty-four appeared to be the “watershed” year, suggesting that the 1964 Civil Rights Act and the 1965 Elementary and Secondary

Education Act, with their provisions for using federal funding to encourage desegregation, were effective in bringing about measureable changes in interracial contact (Orfield and Lee, 2004).

In addition, the Civil Rights Movement of the 1950s and 1960s significantly expanded educational and labor market opportunities for blacks. During the 1980s, blacks began in increasingly large numbers to pursue other professions instead of teaching, some of which were more financially rewarding. Black communities have always held educators in high esteem – but as communities became more integrated and teachers moved their residences from the communities in which they taught, the status of teaching dropped among blacks. As the number of black professionals increased in other fields, black teachers lost significance. Also, because society evaluates worth and status according to income, low salaries have contributed to the decline in teacher status within the black community as it assimilates the more materialistic values of the larger society (Perkins, 1989).

Social change for the black population of the United States during the 1960s was rapid and dramatic – at times so extensive that the decade is popularly characterized as revolutionary, particularly in regards to race relations (Blauner, 1989; Frey, 2004; Goodwin, 1990; Johnson and Campbell, 1981; Tolnay 1998 and 2003). Schools were integrated, civil rights increased, and industrialization and other technological changes had increased opportunities in the region. Therefore, beginning in the 1970s, the flow of migration reversed and blacks either returned to the South or new blacks migrated to the region. As a result, total population of the South increased in the postwar era. The more lucrative financial opportunities provided a motivation to migrate and led to an improved status of blacks – at least to some degree (Adelman et al., 2000; Frey, 2004; Goodwin, 1990; Johnson and Campbell, 1981; Tolnay 1998 and 2003). Johnson and Campbell (1981) used United States Census Bureau data and reported that between 1970 and

1975, 238,000 blacks moved outside of the South while 302,000 moved to the South with a net gain of 64,000 blacks for the region. The concentration of blacks in the South, growing black and white population, an expanding desegregated school system with growing enrollment in the post-World War II, makes the region a central point for the study of black teachers. This chapter assesses this process of changing employment of black teachers by examining the extent to which they lost their presence within the South, in the decades following *Brown* (1954).

3.4 Research Design

Data

I use census data for the years of 1940, 1960, 1970, and 1980 obtained from the Integrated Public Use Microdata Series (IPUMS-USA). The year 1940 serves as the comparison year because it is a year of segregated (dual) school systems, and 1960, 1970, and 1980 are the years after *Brown* (1954) as well as after the passing of the Civil Rights Act of 1964. Prior research explains that integration efforts did not truly begin until the late 1960s and early 1970s after the Civil Rights Act 1964; thus, observations of black teacher employment levels in the years that follow are necessary in order to accurately understand the experiences of black teachers (Lyons and Chesley, 2004).

Conceptual Framework and Methodology

Based on prior research on the segregated South, the region can be divided into three parts: Deep South, Upper South, and Border States. The Deep South, also known as the “Cotton

States,” includes Alabama, Georgia, Louisiana, Mississippi, and South Carolina. Currently, Florida and Texas are often not labeled as Deep South States due to their unique immigration patterns of the 1980s and onwards. However, historically these states were part of the Deep South, therefore they are included in the current analysis. The Upper South includes Arkansas, North Carolina, Tennessee, and Virginia. The Border States include the remaining Southern states: Delaware, Kentucky, Maryland, Oklahoma, and West Virginia (Freeman, 1977). In total, sixteen states are included in this analysis. After *Brown (1954)*, desegregation was implemented at different rates, with the Deep South states adopting and mandating desegregation years after the other states (Clotfelter, 2004; Fairclough, 2007). Therefore, division of the region can provide insights into how desegregation was implemented and the subsequent effects it had on black teachers over time.

To examine the varying levels of black teacher employment, fixed-effects regression analysis of state-level data was conducted. A fixed-effects regression analysis minimizes estimation bias due to the omitted time invariant factors such as a state’s cultural tradition, racial climate, political beliefs, and other such unobserved attributes (Allison, 2006). The data includes repeated measures on sixteen states at four points in time, resulting in sixty-four observations. One regression model was fitted to determine the relationship of black students-to-black teacher ratio with sub-region and decade indicators.² This ratio was used as the dependent variable because, as far as the Southern teacher labor force is concerned, it is likely to be considerably affected by comprehensive desegregation plans. Specifically, increasing desegregation implies two things. First, black students would no longer be taught largely by black teachers and they

² A second regression model was also fitted to determine the relationship of [black students-to-white teacher] ratio with sub-region and decade indicators, as well as the other control variables. The results of this regression analysis are reported in Table A1 of the Appendix.

would be increasingly exposed to white teachers. Second, as noted in earlier, since the Civil Rights Movement had opened new occupational opportunities for black adults, the share of blacks in the national teacher labor force gradually decreased from 1950 onward, particularly in the South. This pattern may also have affected the extent to which the average southern black student was exposed to white teachers in that period.

Dependent Variables

- Black students-to-black teacher ratio: [R_B]

This measure was used as the dependent variable in order to determine the relative change in the representation of black teachers across time and location within the South.

Independent Variables

- Decade (1960, 1970, 1980): [Y]
- Sub-region (Deep South, Upper South, and Border States): [R]

The decade and sub-region factors capture the effect of time and place.

Control Variables

- Total Number of Black Students: [S]
- Total Number of Black Teachers: [T]
- Percent Change in Number of Black Teachers by Decade [P]
- Class Size: [C]

The total number of black students, the total number of black teachers, the percent change in the number of black teachers, and class size are the four time-varying factors that are included in the respective models. The effects of these control variables are not allowed to interact with those of decades or sub-regions. Therefore, the coefficient estimates for these control variables indicate the average effect of the variables over time and across sub-regions. By contrast, the

sub-region effects are allowed to interact with decade effects. Given these two-way interactions, the regression models estimate the trends in the dependent variables, as a function of both location and time.

The full model is specified as shown below:

$$\mathbf{R}_{(B)} = \alpha_i + \beta_1 \mathbf{Y} + \beta_2 \mathbf{R}_i + \beta_3 (\mathbf{Y} * \mathbf{R}_i) + \beta_4 (\mathbf{S}_{it}) + \beta_5 (\mathbf{T}_{it}) + \beta_6 (\mathbf{P}_{it}) + \beta_7 (\mathbf{C}_{it}) + \mathbf{u}_i + \mathbf{a}_{it} \quad (3.1)$$

In which (i) = state and (t) = decade.

As noted earlier, a fixed-effects regression analysis evaluates the varying levels of employment among black teachers across the South during the time period after *Brown (1954)*.

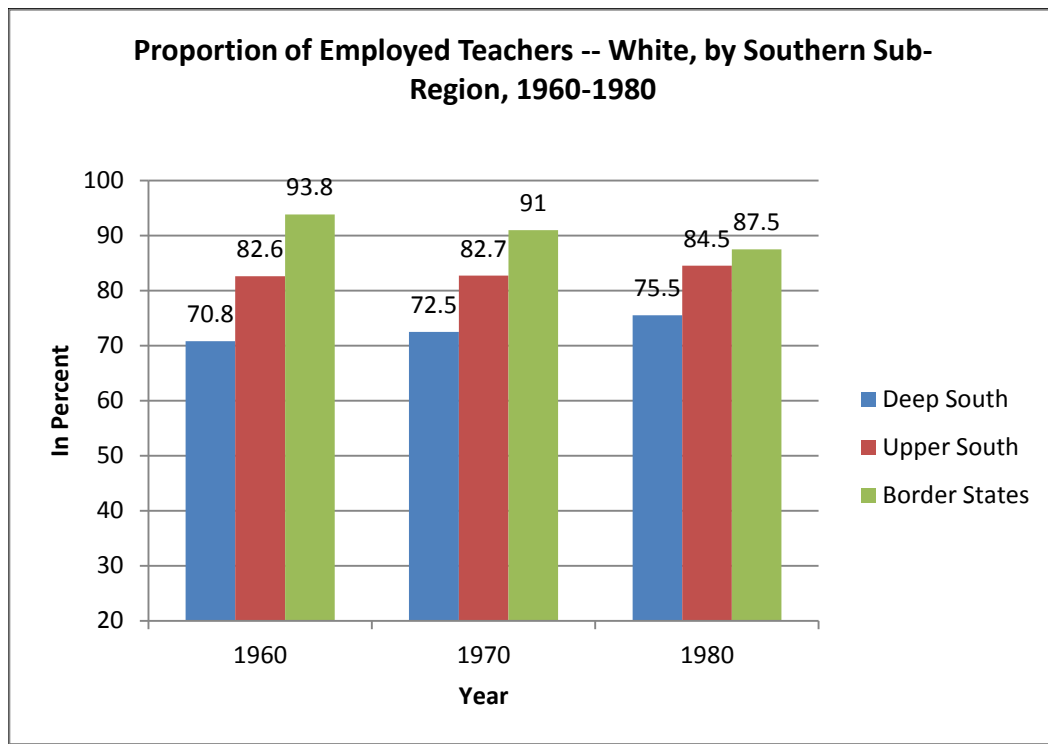
3.5: Findings

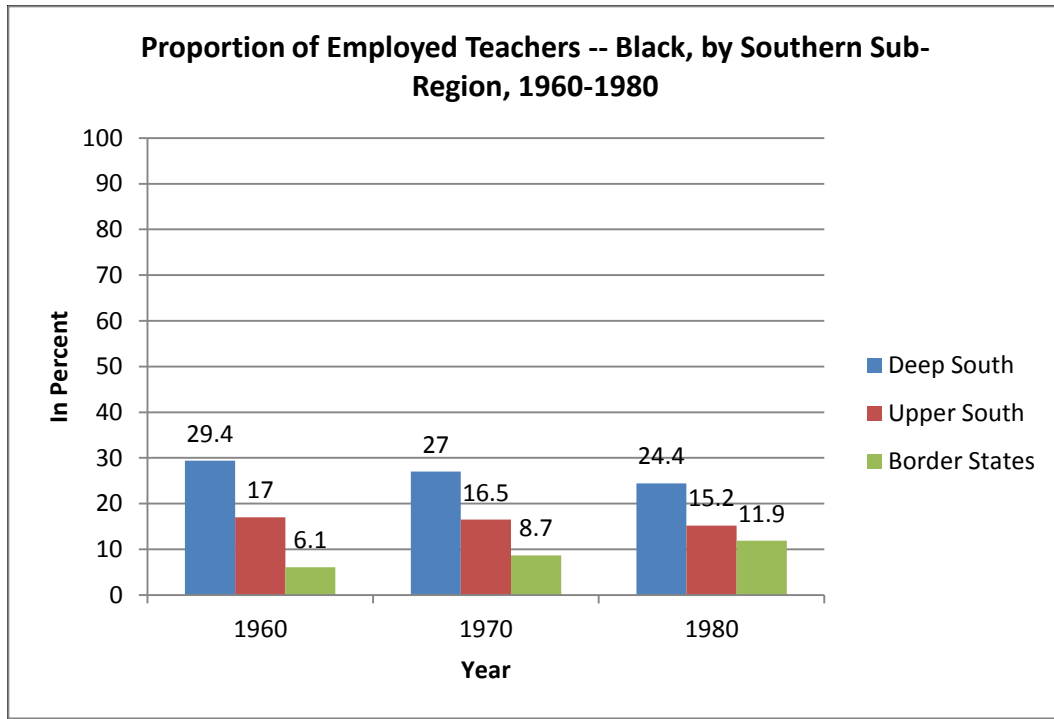
Descriptive Statistics

Figure 3.4 shows the proportion of white and black employed teachers in the three southern sub-regions after desegregation. An overwhelming majority of employed teachers were white in all three sub-regions for each year. In 1960, the Deep South, however, held the greatest proportion of employed black teachers, 29.4%, compared to just 17% and 6.1% in the Upper South and Border States, respectively. Figure 3.5 shows that in 1960, the Deep South also had the largest proportion of black secondary students, 36.8%, compared to 21.3% and 10.5% in the Upper South and Border States, respectively. Over time, the proportion of students who were black stayed the same in the Deep South: by 1980, the proportion of secondary students who were black was 36.6%. However, the proportion of students who were black increased in the Upper South to 24.5% and in the Border States to 16.5%. By 1980, Figure 3.4 shows that the

proportion of employed teachers who were black decreased to 24.4% in the Deep South and to 15.2% in the Upper South but increased to 11.9% in the Border States. Therefore, the proportion of teachers who were black decreased in the Deep South and Upper South States but increased in the Border States between 1960 and 1980. However, the proportion of black students did not change in the Deep South but increased in the Upper South and Border States.

Figure 3.4: Proportion of Employed Teachers by Race and Southern Sub-Region, 1960-1980, IPUMS Sample

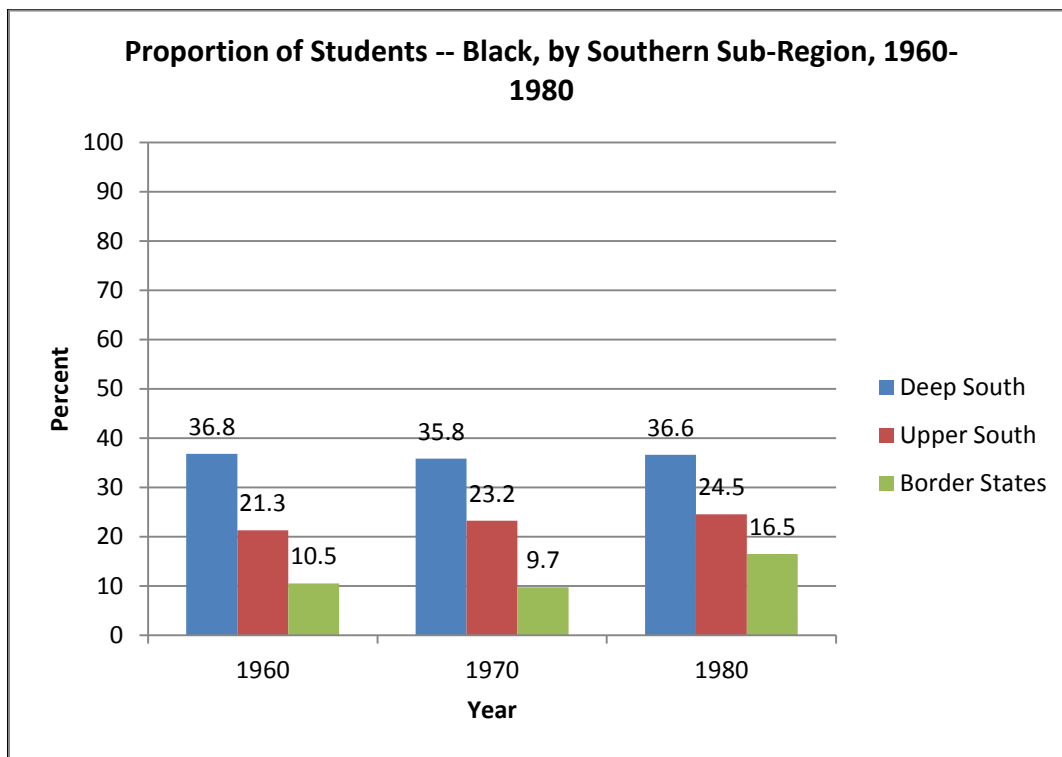




Source: IPUMS – State-Level Data

*Note: Percentages are weighted.

Figure 3.5: Proportion of Black Secondary Students by Southern Sub-Region, 1960-1980, IPUMS Sample



Source: IPUMS – State-Level Data

***Note:** Percentages are weighted.

As noted in Figure 3.2, the South was expanding during this period. The economy was expanding and the population of the South was increasing. While the proportion of black teachers decreased, particularly in the Deep South and Upper South states, the number of both black and white teachers increased over this period as shown in Table 3.3. Tables 3.3 and 3.4 indicate that the absolute numbers of white and black teachers, as well as the absolute number of black secondary students increased in all three sub-regions between 1960 and 1980. In contrast to previous research that explains the loss of black teachers in the desegregated South, Table 3.3 shows that the absolute number of black teachers increased rather than decreased. However, the rate of the increase was not as great as that for white teachers. For example, in the post-1960 years, the percent change in the number of white teachers was greater in the Deep South and Upper South. In fact, between 1970 and 1980, the percent change in white teachers was double the percent change in black teachers. These census numbers illustrate a different story than provided by other historians who studied the experiences of black teachers in the South. For

example, Siddle Walker's (1996) qualitative study of North Carolina's Caswell County Training School describes the relationship between the school and members of the black community, and the aftermath of when the school was forced to close due to desegregation, particularly highlighting the dismissal of the school's black teachers. Fairclough's (2007) study based on oral histories and document analysis explores the employment loss that black teachers experienced because of desegregation. Although, Fairclough (2007) found that many black teachers were dismissed of their duties due to their lack of qualifications, he noted that the actual number of black teachers who were fired had not been accurately established.

The increased number of black secondary students across the period in question illustrates the growing population of blacks in the South; much of this is due to the increased migration of blacks (back) to the South. In addition, more students were attending secondary schools. In fact, Rury et al. (2010) showed that in the postwar era, teenage students were not legally required to attend school, but they did and these students were a critical group in the process of enrollment expansion. Moreover, overall enrollment rates grew rapidly in the South, compared to the other geographic regions (Rury, et al., 2010). In addition, Patterson (2001) explained that the overall student-teacher ratios decreased in the desegregated South, suggesting that more teachers, both black and white, increased to meet the needs of increased enrollment. He also reported that after the passing of the Civil Rights Act (1964) the students-teacher ratio in the South decreased from twenty-five students per class to seventeen students per class by 1980 (Patterson, 2001).

Table 3.3: Percent Change in Black and White Teachers by Southern Sub-Region, 1960-1980, IPUMS Sample

Deep South

Census Year/Race	White[*]	<i>Percent Change in White</i>	Black[*]	<i>Percent Change in Black</i>	Total	<i>Percent^{**} Black</i>	<i>Percent^{**} White</i>
1940	1,172		350		1,522		
1960	2,784	<i>137.54</i>	1,148	<i>228.00</i>	3,932	<i>29.4</i>	<i>70.8</i>
1970	5,006	<i>79.81</i>	1,898	<i>65.33</i>	6,904	<i>27.0</i>	<i>72.5</i>
1980	6,884	<i>37.51</i>	2,233	<i>17.65</i>	9,117	<i>24.4</i>	<i>75.5</i>

Upper South

Census Year/Race	White[*]	<i>Percent Change in White</i>	Black[*]	<i>Percent Change in Black</i>	Total	<i>Percent^{**} Black</i>	<i>Percent^{**} White</i>
1940	628		160		788		
1960	1,355	<i>115.76</i>	285	<i>78.13</i>	1,640	<i>17.0</i>	<i>82.6</i>
1970	2,226	<i>64.28</i>	465	<i>63.15</i>	2,691	<i>16.5</i>	<i>82.7</i>
1980	2,950	<i>32.52</i>	541	<i>16.34</i>	3,491	<i>15.2</i>	<i>84.5</i>

Border States

Census Year/Race	White [*]	Percent Change in White	Black [*]	Percent Change in Black	Total	Percent Black ^{**}	Percent White ^{**}
1940	728		72		800		
1960	1,204	65.38	79	9.72	1,283	6.1	93.8
1970	1,883	56.40	186	135.44	2,069	8.7	91.0
1980	2,125	12.85	303	62.90	2,428	11.9	87.5

Source: IPUMS

^{*}Number reported refers to n (sample size)

^{**}Percentages are weighted

Table 3.4: Black Secondary Students by Southern Sub-Region, 1960-1980, IPUMS Sample

Deep South

Census Year/Race	Black [*]	Percent Black ^{**}
1960	19,850	36.8
1970	14,952	35.8
1980	25,924	36.6

Upper South

Census Year/Race	Black [*]	Percent Black ^{**}
1960	13,718	21.3
1970	12,908	23.2
1980	20,312	24.5

Border States

Census Year/Race	Black [*]	Percent Black ^{**}
1960	3,760	10.5
1970	3,089	9.7
1980	7,472	16.5

Source: IPUMS

^{*}Number reported refers to n (sample size) ^{**}Percentages are weighted

The desegregation decision changed the composition of the teacher labor force. Using data collected from 555 Southern schools that were among the last to desegregate and interviews conducted at 12 of these schools, Orfield (1975) found that the desegregation decision was particularly hard for older white teachers. Many of the older white teachers who worked in formerly high social status white schools, which for the most part served middle-class neighborhoods with above average education levels, had greater difficulty adjusting to desegregation. Orfield (1975) reported that almost half of white teachers would rather teach in less integrated schools because these older white teachers were less optimistic about teaching in integrated schools. Thus, many of the new teachers who were hired to teach in the newly integrated schools were, in fact, younger white teachers. Many of the older white teachers felt “severely inadequate” in handling the new students who were attending their schools. Orfield (1975) stated that many principals reported white teachers crying, in need of advice on handling this new situation. As a result, many older white teachers were either replaced by younger white teachers, or younger white teachers were hired to deal with the new student body. Census data shows that the mean age of white teachers decreased from approximately 42 years to 38 years from 1960 to 1980, while the mean age of black teachers increased from 39 years to 43 years during this same period, suggesting that younger white teachers were being hired. However, since Table 3.3 shows that the number of black teachers also increased, this also suggests that older black teachers, who might have been dismissed immediately after desegregation, may have been re-hired, particularly after the Civil Rights Act (1964) to help instruct black students.

After the Civil Rights Act (1964), members of the African-American community placed great emphasis on entering and excelling in professions that were more prestigious because it

would help them politically and economically progress in society. Furthermore, the value of becoming a teacher given the high cost of teacher education and low salary return compared to other occupational and professional opportunities, lead more young blacks to choose other, more financially lucrative opportunities. Increased southern economic growth and the mandates of the Civil Rights Act (1964) presented African-Americans with more opportunities and subsequently, greater salaries (Futrell, 1999; King, 1993; Shaw, 1996; Shipp, 1999).

The fixed-effects analysis in this chapter helps assess the varying levels of employment of black teachers in the South, during this period of enrollment growth. However, in addition to accounting for class size and number of black teachers and students – which are logical controls in estimating student-to-teacher ratios – the regression models control for the rate of increase in the number of black teachers over time as well. This is a factor that is overlooked in past research due to the prevailing view that black teachers experienced a net loss in teaching jobs in the South, post-*Brown* (1954) era (see Table 3.3).

Regression Results

The fixed-effects regression results are shown in Table 3.5, with 1940 and the Deep South as the baseline comparison year and sub-region, respectively. The Deep South is the reference category because it is the sub-region in which the heaviest concentration of blacks lived and worked. The sub-region main effects are dropped because time invariant factors are controlled for by default in fixed-effects analysis.

The fixed-effects regression examines the effects of year and sub-region, and the interaction effects of the different sub-regions with decade indicators, while controlling for the

number of black students, black teachers, the percent change in black teachers over time, and the overall class size. The effect of black teachers' years of education was also tested, but found not to be significantly related to the employment of black teachers in the South. The dependent variable is [black students-to-black teacher] ratio, and this particular ratio was used to capture the change in the number of black students taught by black teachers.

Table 3.5: Results of Fixed-Effects Models Estimating the Influence of Southern Sub-Region and Decade on Black Students-to-Black Teachers Ratio

Variable	Black Students-to-Black Teachers Ratio
Decade	
1960	12.698* (7.899)
1970	30.414*** (11.302)
1980	8.620 (10.515)
Decade x Sub-Region	
Upper South x 1960	2.541 (8.103)
Border States x 1960	-1.541 (6.986)
Upper South x 1970	-15.752** (7.683)
Border States x 1970	-17.201* (8.732)
Upper South x 1980	5.128 (9.162)
Border States x 1980	1.246 (9.202)
Population Controls	
Black Students Population	-0.000084 (0.0004)
Black Employed Teachers	-0.000027 (0.0005)
Change in Black Employed Teachers, by Decade	-2.018 (1.978)
Total Students-to-Teacher Ratio	17.279*** (6.484)
Intercept	18.233 (16.570)
R ² Within	0.7952
R ² Between	0.0603
R ² Overall	0.6258

F value	7.76***
Hausman Test	5.76*

* Significant at the 0.100 Level ** Significant at the 0.050 Level *** Significant at the 0.010 Level
Standard Errors shown in parentheses

Note: A fixed-effects regression examining the same independent variables on [black students-to-white teacher] ratio was also conducted and the the results are reported in the Appendix (Table A1). The results of this regression offer similar insights to the fixed-effects regression results reported in the above table.

The [black students-to-black teacher] ratio significantly increased in the Deep South by 1960 ($\beta = 12.698$; $p < 0.100$) and by 1970 (1970: $\beta = 30.414$; $p < 0.010$). Thus, in the Deep South, the average [black students-to-black teacher] ratio increased by approximately 13 students by 1960 and then again by approximately 31 students by 1970.

In addition, the results also provide some insights into black teacher employment across the sub-regions of the South. Although the majority of the interaction effects are not significant, the interaction variables for 1970 are notable. The [Upper South*1970] is negative and significant ($\beta = -15.752$; $p < 0.050$) and the [Border States*1970] is negative and significant ($\beta = -17.201$; $p < 0.100$). This shows that the [black students-to-black teacher] ratio increased by 1970, but to a lesser degree in the Upper South and Border States compared to the Deep South. This suggests that by 1970, the relative presence of black teachers decreased the most in the Deep South; the ratio increased by 30.414 in the Deep South, compared to 14.652 ($30.414 - 15.752$) in the Upper South and by 13.213 ($30.414 - 17.201$) in the Border States.

Overall, the [black students-to-black teacher] ratio increased across the South in the post-*Brown* (1954) years, while the [black students-to-white teacher] ratio decreased (See Table A1 in Appendix). Therefore, the regression results confirm the prevailing insight that the racial composition of the teacher labor force became increasingly white in this period. From a conventional standpoint, this would be largely attributed to the forced dismissal of black teachers during desegregation. However, as Table 3.3 indicates, black teachers *gained* jobs, rather than lost jobs, although not at the same rate as white teachers did. Therefore the increase in the [black students-to-black teacher] ratio is likely to be due to racially mixed classrooms under desegregation mandates, *as well as* to the relative increase in the proportion of white teachers as blacks increasingly entered other occupations as a result of the Civil Rights Act (1964).

3.6: Concluding Remarks

In the late nineteenth and early twentieth centuries, the various geographic regions of the United States specialized in different industries. For example, the North specialized in textiles and leather, while the South specialized in agricultural goods such as cotton, tobacco, and lumber (Kim, 1995, 1998, and 2000). During this period, the industrial-based economies of the northern cities created stable employment opportunities and thus, attracted blacks and whites from the South who sought income stability. By the middle of the twentieth century, industrialization and technological advancements had reached the South. This created more opportunities for stable work and income, and as a result attracted many blacks and whites (back) to the South. Regional migration patterns have been connected to changes in economic development. Improved economic opportunities, as well as race relations brought about from *Brown v. Board of Education* (1954) and the Civil Rights Act 1964 created a transition in the South's net migration

from loss to gain after the 1970s (Fuguitt et al., 1993). The post-1970 period in the South experienced economic growth and educational expansion, and therefore regional differences diminished (Frey, 2004; Fuguitt et al., 1993; Goodwin, 1990; Johnson and Campbell, 1981; Kim, 1995, 1998, and 2000; Rury et al., 2010).

The findings of this chapter show that the ratio of [black students-to-black teacher] increased over time across the different southern sub-regions. Compared to the Upper South and Border States, the Deep South experienced the greatest ratio increases, suggesting that desegregation and the Civil Rights Act (1964) affected this region of the South first and fast; by 1970, more black students were going to racially mixed schools in these states, where a larger number of white teachers were teaching.

However, with the increased migration to the South, and the expansion of the southern school system, the findings also show that the absolute number of both black and white teachers increased across the region. Therefore, the findings of this chapter suggest that the post-desegregation South experienced a *relative* loss of black teachers, not an *absolute* loss of black teachers. The relative loss of black teachers added to the general whitening of the southern teacher labor force, which affected the overall racial and ethnic composition of the national teacher labor force. Whites were becoming teachers in greater numbers than blacks who may have been choosing other occupations and professions.

It is also important to note that desegregation and the Civil Rights Act (1964) may have not immediately contributed to the firing of black teachers. A commonly practiced policy was to move the lighter skinned or the lighter complexioned black teachers to the integrated schools (Milner, 2004). The idea was that the lighter-complexioned black teachers were supposedly more closely connected to the white students and teachers and consequently less threatening to

white teachers, white community members, and white students in the formerly all-white segregated schools. While darker-skinned teachers were considered “too different” to teach in formerly all-white schools, lighter-skinned black teachers were acceptable (Milner and Howard, 2004).

Another practice that was widely used in the South during the time after desegregation was to demote black teachers. Instead of outright firing black teachers, many black teachers were demoted to teacher assistant in the newly integrated schools (Fairclough, 2007; Foster, 1997; Fultz, 2004). Foster (1997) reports that many black teachers were assigned to teach courses for the challenging black students. Fultz (2004) reported that “displacement” describes the many practices and policies, which included dismissals, demotions, forced resignations, “nonhiring” of black teachers, token promotions of black teachers, lower salaries, less responsibility, and coercion to teach subjects or grade levels other than those they were trained to teach, that southern school boards, school superintendents, and politicians used to undermine the authority and employment of black teachers (Fultz, 2004). Fairclough (2007) admitted “that the number of black teachers whom integration displaced has never been accurately established. A study of 108 school districts that implemented desegregation between 1968 and 1970 showed a net loss of 923 black teachers, about 10% of the total. Moreover, of the 5,196 new teachers who were hired, 86% of them were whites,” (p. 407). The results of this chapter show that there was not a net loss in the absolute number of black teachers; in fact, there was an increase. However, there was a relative loss of black teachers, particularly in the Deep South. A number of factors could explain these findings, including the fact that more blacks were choosing other occupations. However, in order for the southern teacher labor force to have the same proportion of teachers as in 1950, when the proportion teachers who were black was 23.1%, 85,000 black

teachers were needed in 1980 according to census data. Outside of the South, the teacher labor force is predominantly white and as the results of this chapter show, the relative whitening of the southern teacher labor force converged to that by the end of the twentieth century.

3.7: Further Research

The results of this chapter offer several directions for future research. One in particular, is to conduct further quantitative work to disentangle the effects of the racial climate and political climate in the southern states to more closely identify the particular reasons for the relative loss of black teachers and possibly the relative increase in other occupations/professions. The lower rate of black teachers hired, may possibly be due to a lesser number of blacks choosing teaching as an occupation. Thus, further research needs to examine the occupational and professional choices of blacks during this time period in the South to determine if college-educated blacks were choosing non-teaching jobs at a higher rate. Additionally, because the mean age of black teachers increased over this period, conducting qualitative research, such as interviews, would be useful in understanding if young black individuals made a conscious decision to not become a teacher or whether licensure and certification exams, as King (1993) explained, posed impediments to becoming a teacher. It would also be beneficial to broaden the geographical focus to understand the experiences of black teachers in the post-desegregation era. Although, there was an increase in the absolute number of black teachers in the South between 1960 and 1980, this may not have been the case in the other geographic regions. However, in order to better understand the absolute increase in the number of black teachers in the South,

exploring differences in employment of rural and urban black teachers may provide further insights on if the increased size was primarily in one setting compared to the another.

CHAPTER FOUR

THE MONTHLY SALARY RETURNS TO THE EDUCATION DEGREE: TEACHERS AND NON-TEACHERS, 1993 AND 2003

4.1: Salary Returns to College Degree Vary by Undergraduate Major

According to human capital theory, the relationship between education and earnings is productivity. It is argued that additional years of schooling serve to increase an individual's intellectual ability and due to more years spent learning the knowledge and skills, he is deemed to be more productive at work (Becker, 1993). Furthermore, a considerable amount of research finds that that salary returns vary substantially by undergraduate major, or the nature of the knowledge and skills acquired (Arcidiacono, 2004; Brown and Corcoran, 1997; Daymount and

Andrisani, 1984; Del Rossi and Hersch, 2008; Eide, 1994; Graham and Smith, 2005; Loury, 1997; and Loury and Garman, 1993). These studies confirm the highest monetary returns are for degrees in business, computer science, engineering, mathematics, and physical sciences in comparison to degrees in the arts, education, and the humanities. Furthermore, recent anecdotal evidence (Gomstyn, 2003; Lewin, 2002) suggests the proportion of undergraduate students double majoring is increasing. College graduates who combine an arts, humanities or social science major with a major in business, engineering, mathematics or the physical sciences have returns 7%-50% higher than graduates with a single major in the arts, humanities or social sciences (Del Rossi and Hersch, 2008). Signaling theory, on the other hand, suggests that in addition to increasing individual productivity, education serves as an indicator, or signal, for greater productivity and is thus rewarded in the labor market (Weiss, 1995).

Specifically examining the monetary returns to education degrees, Arcidiacono (2004) utilized National Longitudinal Study of the Class of 1972 (NLS72) data and studied only those high school graduates, both male and female, who graduated from a four-year university. He aggregated undergraduate college majors into four categories (natural sciences, business, social science/humanities, and education) and examined their 1986 earnings by using their 1974 undergraduate major choice. He found mean spread in earnings is greater than \$16,000 between the highest paying majors, those in the natural sciences, and the lowest paying major, education. In fact, those who chose not to attend a four-year university or not complete their four-year university degree actually had significantly higher mean earnings than those college undergraduates who completed their education undergraduate degrees (Arcidiacono, 2004). Many public school teachers hold undergraduate degrees in education, and the suggestion that it

is one of the least economically rewarding undergraduate majors is a point of concern, because low salary makes recruiting and retaining the “best and brightest” into teaching all the more difficult.

4.2: Research Questions

The purpose of this chapter is to investigate the salary differences between education degree recipients working as teachers, in education and non-education occupations. It utilizes National Science Foundation (NSF) data obtained from the National Survey of College Graduates (NSCG) for the years 1993 and 2003. By examining teachers’ undergraduate majors and degree levels, the first research question focuses on teachers and investigates whether the teacher labor market monetarily rewards them. The first research question is: *What are the differences in the monthly salary returns of those teachers who have degrees in education compared to those who do not hold degrees in education?* Further: *How are these differences explained?* Finally: *Are there significant monthly salary differences in terms of teachers’ highest degree level?*

In connection with the previous research on salary returns of college major choices, this study examines whether education degrees are valued, as measured in monthly salary, within the teaching occupation compared to non-education degrees and whether different degree levels significantly affect salary returns. The current teacher labor market consists of a notable number of teachers who did not take the traditional route into teaching through majoring in education. Thus, investigating how the occupation rewards certain educational qualifications differently will indicate if certain knowledge and skills are valued more than others within the teacher labor

market. Second, the salary of those who majored in education but are not working in the field of education is examined. The second research question is: *What are the differences in monthly salary returns of those who have degrees in education and work in the education sector compared to those who work outside the education sector. Further: How are these differences explained?* The purpose of this chapter is to understand the differences in monthly salary returns of education degree recipients across different occupations in order to provide explanations based on human capital and signaling theories to explain the differences.

4.3: Literature Review

For educational researchers and policymakers, focusing on teachers has been one key approach to improving the public K-12 education system because recent discussion of American education has focused on the shortage of high quality American teachers (Ingersoll, 2007). Teachers are the education system's major resource, and their salaries occupy the largest percentage of public K-12 district education budgets. To improve the excellence of the teacher workforce, some states have intensified teacher preparation and certification requirements, while other states have eased requirements and introduced "alternative" ways of becoming certified to teach to attract more individuals to teaching. Some educational researchers argue that many teachers are recruited among the least academically talented members of the college-educated population (Ballou, 1996; Labaree, 2004). This is of particular concern in the current moment,

as the demands on teachers' pedagogical training and subject-matter knowledge have never been greater (Ballou, 1996; Ingersoll, 1999; Odden and Kelley, 2002). Odden and Kelley (2002) have argued that compensation is one policy tool that can be used to attract more able and high-quality candidates to teaching.

The first section of this literature review describes the research that discusses teachers' educational qualifications and teacher quality, as measured by student achievement gains. The second section evaluates the current structure of teacher salary schedules. The final section synthesizes the research that examines the connection between teacher salary and teacher quality as measured by selectivity of undergraduate institution.

Teacher Educational Qualifications and Teacher Quality

Teachers' skills and knowledge are important factors to consider when measuring the impact of teacher inputs on student achievement because what the teacher knows and understands is passed onto students. However, lack of data has prevented researchers from determining whether students learn more from teachers with particular degrees or coursework. The available datasets contain information on teachers' degree level (bachelor's degree, master's degree, etc.) but not whether the higher degree was related to the subject-matter the teacher transmits in his or her own classroom, making the data less useful than it might be (Hanushek, 1992; Link and Ratledge, 1979; Harnisch, 1987; Murnane, 1975, Murnane and Phillips, 1981; Rivkin, Hanushek, and Kain, 2001).

Goldhaber and Brewer (1997) used detailed teacher data from the NELS:88, a nationally representative survey of approximately 24,000 eighth grade students conducted in the spring of 1988. Subsets of these students were surveyed in the spring of tenth (1990) and spring of twelfth (1992) grades. For each of the surveys, students took one or more subject-based tests in mathematics, science, English/writing, and history. Therefore, the NELS:88 follow-up data sets permit longitudinal analyses of growth in student achievement from eighth to tenth grade, tenth to twelfth grade, and eighth to twelfth grade in particular subjects. The NELS:88 data also include information on relevant student, teacher, and school characteristics. Goldhaber and Brewer (1997) found that tenth grade mathematics students did not score better if their teachers had master's degrees. However, including information about the subject of the teachers master's degrees produced significant results. Mathematics students whose eighth thru tenth grade teachers held master's degrees in mathematics had higher achievement gains than those whose eighth through tenth grade teachers had either no advanced degrees or advanced degrees in non-mathematics subjects. In addition, students whose teachers held bachelor's degrees in mathematics learned more than students whose teachers held bachelor's degrees in non-mathematics subjects. In a follow-up study, Goldhaber and Brewer (2000) used the twelfth grade students and again found that students learned more from teachers with mathematics majors and from teachers with master's degrees in mathematics.

Kukla-Acedvedo (2009) examined teacher mathematics preparation and student achievement outcomes. She explained that because of the lack of detailed information in most national datasets, educational researchers are forced to use proxies, like number of college courses taken and degree attainment, to draw conclusions about the relationship between teacher inputs and student outcomes. In her study, she used detailed data from a sample of school

districts in Kentucky covering three school years: 2000-01, 2001-02, and 2002-03. This unique dataset matched individual teachers to fifth grade math students for each of these school years. She collected information about these teachers' pre-service performance, including overall undergraduate GPA, undergraduate math major GPA, and undergraduate math education GPA. In addition, she collected other relevant school, teacher, and student variables. She tested all of these variables on the outcome variable – students' fifth grade mathematics score on the Kentucky Core Content Test (KCCT). Her results show that high achieving college students are likely to be high achieving teachers; those fifth grade students whose teachers had high GPA indicators, were also the teachers whose fifth grade students performed the highest on the KCCT (Kukla-Acedvedo, 2009). Furthermore, she tested her model for different racial and ethnic groups and found that for black students, teacher pre-service performance, specifically overall undergraduate GPA, had especially strong effects for math achievement scores (Kukla-Acevedo 2009).

Ehrenberg and Brewer (1994) used the High School and Beyond (HS&B) survey, to test a sample of tenth graders in 1980 and then re-test them as twelfth graders in 1982. The measure of student achievement was a composite score combining mathematics, reading, and vocabulary skills. The original HS&B data collection did not contain teacher data, but a follow-up survey of twenty-five teachers at each of about 320 public schools nationwide allowed the researchers to examine whether individual students learned more when their schools' average teacher quality was higher. Teacher quality variables included percentage of teachers with master's degrees and with ten or more years of experience. For each school, the authors also calculated the average ratings of teachers' undergraduate institutions using Barron's six-category selectivity rating system. The researchers conducted separate analyses for students in different racial and/or ethnic

categories and found that with white students and black students, teachers from better-rated undergraduate institutions were more effective, whereas with Hispanic students, conclusions could not be drawn (Ehrenberg and Brewer, 1994).

However, in the 1970s, Murnane and Phillips (1981) conducted a study using achievement data on several hundred low-income black elementary school students in Gary, Indiana (Gary Income Maintenance Experiment) and could not determine any relationship between teachers' undergraduate institution ratings and students' Iowa Test of Basic Skills (ITBS) vocabulary score gains. In their study, the authors connected the students to their individual teachers and controlled for several other teacher characteristics, such as years of experience, gender, race, and degree attainment.

Specifically, previous research shows that teachers with degrees in mathematics produce greater student achievement gains for mathematics. However, do these mathematics teachers who have master's degree in a field other than education (e.g. mathematics), have relatively greater earnings compared to teachers who hold degrees in education? The missing link in these research studies is that researchers have not explored whether teachers with non-education degrees have higher salaries, on average, and this is especially important in those school districts where students of these teachers are achieving at higher levels. In addition, it is important to examine if the degree level (i.e. bachelor's, master's, doctorate) or the field of the degree level (i.e. education or non-education) matter in regards to salary.

Teacher Salary

Teachers have a pivotal role in developing and directing the next generation; consequently, how to best attract and retain knowledgeable and effective public school teachers is one of the most important policy issues in the field of education today. Nearly all researchers agree that high-quality schools require strong teachers in the classrooms; however, agreement about how public policy can make possible the recruitment and retention of the best teachers is far more difficult to reach (Eberts, 2007; Hanushek and Rivkin, 2007; Jacob, 2007; Monk, 2007; Murnane and Steele, 2007; Odden and Kelley, 2002).

Education policy makers argue that increasing teacher salary is one of the most effective ways to recruit and retain high-quality teachers. Murnane and Steele (2007) use basic economic principles to explain how changes in wage levels will shift the demand and supply for teachers; *an increase in the wage level will decrease demand and increase supply of teachers, whereas a decrease in the wage level will increase demand and decrease supply of teachers.* This theory indicates that if teacher salary is raised, then more high achieving individuals, who would otherwise not choose teaching as an occupation, would be drawn into the occupation compared to other financially lucrative occupations and professions since the opportunity costs of becoming a teacher decrease (Ballou and Podgursky, 1995; Imazeki, 2005; Murnane and Steele, 2007). In contrast, when teacher salaries are lowered, many highly academically able students choose other occupations and professions in which the monetary returns are greater (see, for example, Bacolod, 2007; Ballou, 1996; Loeb and Page, 2000; Southwick and Gill, 1997).

Teacher salary continues to receive considerable attention among policymakers since it makes up the largest proportion of the K-12 public school budget (Allegreto et al., 2004; Lankford and Wyckoff, 1997; Taylor, 2008). In the 1999-2000 school-year, \$200 billion was spent on teacher salaries -- over 60% of current spending on public schools (NCES, 2000).

Changes in average teacher salary have been well-documented over time; in 1956, the average K-12 teacher earned \$27,139 per year (in 2002 dollars); by 2002, average earnings increased to \$44,367 – an approximately 60% increase in real earnings over this fifty-year period (Allegretto et al., 2004). However, this growth in real salaries has by no means been consistent. Real salaries increased by 30% between 1960 and 1970. During the 1970s, teachers experienced a 10-15% decrease in real annual earnings, and this decline in average teacher salary was accompanied by a major decline in the average academic achievement of those individuals who chose teaching as an occupation (Bacalod, 2007; Loeb and Page, 2000; Odden and Kelley, 2002). The resulting concern about the decline in quality of public education caused a series of educational proposals in the 1980s, especially in regards to making a greater effort to attract and retain high quality teachers. Increasing teacher salary, particularly for newly entering teachers, gained wide support. Thus, increases in average teacher salaries occurred across the country during the 1980s. Between 1980 and 1990, national average teacher salaries increased by 20% (Odden and Kelley, 2002). Since the 1980s, teacher salaries have been steadily flat, neither increasing nor decreasing in real terms (Allegretto et al., 2004; Bacolod, 2007; Lankford and Wyckoff, 1997; Loeb and Page, 2000; Odden and Kelley, 2002; Taylor, 2008).

Standard analyses of teacher compensation compare the trends in average annual teacher salary with that of some comparison group. These reference groups may include all full-time workers, full-year workers with at least a college degree, full-time professionals, or full-time workers in other female-dominated occupations. Generally speaking, these studies find that relative teacher salary increased until the early 1970s; then, when real teacher salaries began to decrease, so did their relative salaries; real teacher salary decreased at a faster rate than that other occupations' salaries, many of which also saw declines in real wages over this period. After

some recovery in the 1980s, relative teacher salary began to decrease again in the early 1990s and has continued to steadily decrease. When comparing beginning teacher salaries to other categories of college graduates, Odden and Kelley (2002) found that beginning teacher salaries in the 1990s were significantly below those of all liberal arts graduates, the primary competitive pool for teachers. It should be noted, however, that teachers have not always earned less than other college graduates; female teachers during the 1950s actually earned more on average than other female college graduates (Allegretto et al., 2004; Bacolod, 2007; Lankford and Wyckoff, 1997; Loeb and Page, 2000; Taylor, 2008; Walden and Sogutlu, 2001). In fact, Loeb and Page (2000) show that female teachers' annual earnings in 1963 were \$23,415 (1994 dollars), whereas female college graduates in other occupations had average annual earnings of \$19,942 (1994 dollars).

However, other analyses of relative teacher pay attempt to control for changes in the demographic composition of the teaching and general labor forces. The major difference between these two working populations occurred during the 1970s and 1980s, when the hiring of new teachers slowed and the average age and work experience of practicing teachers increased relative to other workers. Using data from the Current Population Survey (CPS), Flyer and Rosen (1997) show that earnings of the average teacher increased relative to other college graduates' earnings between 1967 and 1989. However, they note that this increase is almost entirely due to a higher rate of growth in the experience and education of the average teacher. After controlling for the demographic composition of the teaching and college graduate labor forces, they find that the relative wage of elementary teachers in particular decreased more than 15% over this twenty year period. Both Bacolod (2007) and Hanushek and Rivkin (1997) used 1940-1990 Census data and controlled for demographic changes in the labor force and found that

the relative wage position of teachers has been steadily decreasing since 1960. Allegretto et al. (2004) used both the Current Population Survey (CPS) and the National Compensation Survey (NCS) to compare teacher salaries with that of other professions over the 1980s, 1990s, and early twenty-first century. Their conclusions are noteworthy: since 1996, teachers' inflation-adjusted weekly wages have risen 0.8% while those of other college graduates rose 12%.

Non-demographic factors influence teacher salaries. Taylor (2008) used the Individual Public Use Microdata Sample (IPUMS) five percent from the 2000 Census and found that teachers are more likely to be found in rural communities and low-wage metropolitan areas than are college-educated workers who work in other occupations and professions. She argues that the geographic distribution of teachers explains the relatively low average wages found in most studies of teacher salary (Taylor, 2008). Along these same lines, Stoddard (2002) controlled for state differences in the cost of living and explained that teaching salaries are commonly adjusted for the cost of living, creating interstate variation in average teacher salaries.

Teacher Quality and Teacher Salaries

Teacher academic and preparation characteristics and their relationship to student achievement figure into policy discussions in the identification of patterns and trends in teacher quality. For example, low-income students tend to have fewer teachers with certain qualifications, such as a master's degree or greater years of experience (Ingersoll, 1999). Furthermore, information about teacher academic and preparation characteristics and its relationship to teacher salary is important in determining if teacher salary is, in fact, an effective policy tool. Just as Boyd et al. (2007) explained that certification exams dissuade many bright

individuals from choosing the teaching occupation because of the tedious nature of preparation and certification, relatively low teacher salaries (compared to other occupations/professions that require a four year degree) are also a factor that these individuals consider. By examining changes in the composition of the teacher labor force and shifts in salary schedules over time, research has found that teacher salaries have a significant, although small, impact on the types of students who choose teaching as an occupation and the teachers who are hired in a district, indicating that a relationship between salary and teacher quality is, in fact, operative (Ballou, 1996; Bacolod, 2007; Figlio and Kenny 2007; Hanushek, Kain, and Rivkin, 2004; Hanushek and Pace, 1995; Loeb and Page, 2000; Player, 2009, 2010).

Player (2009) asserts that teacher quality makes a significant difference in student outcomes and appears to be related to the academic ability of the teacher. However, because districts rely on rigid salary schedules, the claim that productive teachers receive positive premiums in the labor lacks substantial evidence. Player (2009) used the Schools and Staffing Survey (SASS 1999-2000), a nationally representative survey of teachers, schools, and districts throughout the United States, to study the monetary returns to academic ability in the public teacher labor market. His measurement for academic ability was the selectivity of the college from which teachers received their bachelor's degrees as calculated by Barron's *Profiles of American Colleges*. He found that the average salary of teachers who graduated from highly-selective colleges, compared to competitive and non-competitive colleges, is higher; graduates of the most selective colleges earn a return of 14.2% and graduates of competitive colleges earn a return of 10.1% above the graduates of less-selective colleges (Player, 2009).

Player (2009) explained that much of this premium is because high-ability teachers sort into districts that pay more. Using matched panel data sets of all public school Texas students

and teachers, Hanushek, Kain, and Rivkin (2004) note that relative teacher pay is a more important variable in teachers' consideration of a job than absolute teacher pay, so districts with higher teacher salaries relative to neighboring districts within a state tend to attract higher quality teachers. However, the premium for academic ability does not appear to be entirely captured by the steps on the salary schedule. Player's (2009) empirical evidence indicated that high-ability teachers receive higher salaries than one would predict given their education and experience and that much of this variation in teacher salary is found within-districts. He explains that although the salary schedule for teachers is rigid because teachers are most often paid based upon their education and experience levels, there may be some opportunities for teachers to earn income (such as being a mentor to new teachers) above the salary schedule. He also states that there is some anecdotal evidence that principals or district administrators may have some flexibility to "bump" teachers up the salary schedule by crediting them with extra experience if that teacher is perceived to be especially productive. If teachers graduating from selective colleges have a greater ability to receive such benefits, there may be returns to selectivity within districts (Player, 2009; 2010).

Player's (2009) research indicated that high-ability teachers sort into higher paying school districts, while other studies show that high ability students sort into certain majors and subsequent occupations and professions. Most academically talented graduates are less likely to choose teaching as an occupation than their less academically successful peers (Bacolod, 2007; Ballou, 1996; Corcoran, Evans, and Schwab, 2004). Corcoran et al. (2004) argued that schools once found a rich labor pool in college since post-college employment opportunities were limited for women, and teaching was among the best choices. Today, in contrast, educated women compete for positions in a diverse range of occupations and professions, with the best and

brightest believed to be least likely to choose teaching. Using five cohorts of high school graduates between the years 1957 and 1992, Corcoran et al. (2004) found that throughout this period, the average female teacher scored consistently below the average female college graduate on academic abilities, as measured by math and verbal standardized test scores. Moreover, the relationship between academic abilities and entry into teaching among female high school graduates has weakened over time; the higher the standardized test scores, the less likely the female high school graduate was to choose teaching as an occupation (Corcoran, et al., 2004). Ballou (1996) used data on more than 50,000 new bachelor's degree recipients collected from the Survey of Recent College Graduates (1976 through 1991) and found that college graduates from more selective institutions were less likely to choose a teaching major and less likely to choose to teach after certification than those from less selective institutions. Bacalod's (2007) study of undergraduate women also indicated the significance of increasing higher-paying professional opportunities for women in the decline in teacher quality.

Loeb and Page's (2000) study, which used state-level panel data created from the 1960-1990 IPUMS data, showed that teacher salary does have an effect on student attainment outcomes. They defined the dropout rate as the percentage of all 16-19 years olds living in the state who were not currently attending high school and did not have a high school diploma. Conducting regression analyses with the dropout rate as the dependent variable and teacher salary measures --real teacher wages, and relative teacher wages -- as independent variables, they found that if relative teacher salary increased by 10%, high school dropout rates decreased by 3%-4%. This suggests that if teacher salary is increased, more academically talented students will be drawn to the occupation or the possibility that the current and future teachers will stay in

the occupation (increasing teacher retention), thus creating a larger pool of high quality teachers, which in turn creates higher student attainment outcomes.

Although teacher salary is an important policy tool, it has only been compared to the salaries of other college graduates who work in various sectors of the economy. In connection with the literature on field of degree and monetary returns, research shows that education degrees are one of the least, if not the least, monetarily rewarded degrees (Arcidiacono, 2004). Returns to the education degree within teaching, within education, and outside of education have not been compared and contrasted. Is the education degree considered to be more or less valuable within the occupation of teaching, and how valuable is it within and outside the field of education? Comparing returns to the education degree in various employment sectors of the economy will assist in determining if the knowledge and skills associated with the degree are rewarded differently across various sectors. This is important to understand because it will assist in determining if education degree recipients are leaving teaching because of the higher returns to their degree outside of teaching.

4.4: Research Design

Data

The data for this analysis comes from the 1993 and 2003 National Survey of College Graduates (NSCG), which is part of an ongoing National Science Foundation (NSF) data collection program known as Scientists and Engineers Statistical Data System (SESTAT). The 1993 and 2003 NSCG are cross-sectional surveys administered by the United States Bureau of

the Census. The survey contains detailed information on education characteristics, such as major and minor fields of study and employment characteristics, including annual earnings and sector of employment. In addition, the surveys include contain background information on individual-level characteristics and therefore are well suited for examining this issue of salary returns to teachers and education degree recipients. The results of the survey are vital for educational planners within the federal government and academia. Employers in all sectors (education, industry, and government) use the results of this survey to understand trends in employment opportunities and salaries for various degree fields as well as employment sectors.

The 1993 NSCG sampled over 100,000 individuals under the age of 76 (born after September 30, 1917), who, as of April 1, 1990, had a bachelor's or higher degree in any field. The 2003 NSCG is used to update the 1993 NSCG findings; the 2003 respondents were also under the age of 76 (born after September 30, 1927), who had a bachelor's or higher degree by April 1, 2000. The NSCG survey thus is a large sample with a broad graduation year range and therefore a longer period over which labor market behavior and outcomes can be observed. In cross-sectional research, data was collected from the research participants at a single point in time or during a single, relatively brief period. Thus this chapter conducts two separate analyses for 1993 and 2003. In addition, by using these two years of cross-section data, changes, if any, over this decade can be noted.

For the purposes of this analysis, the reported information on major fields of study of all elementary and secondary school teachers was of particular importance. In addition, all persons with a bachelor's, master's, and/or doctorate degree in education were noted. Thus, educational qualifications were coded as dummy variables for BA Education, BA Degree, MA Education, MA Degree, PhD Education, and PhD Degree. For purposes of examining full-time workers,

those individuals who were above the age of 65 years (due to retirement) and those individuals who are not in the labor force full-time were omitted from this study. Dummy variables for employment sector were also created. Employment sector was categorized into six categories: Education, Federal Government, State Government, For-Profit Private Sector, Non-Profit Private Sector, and Self-Employed. Education includes individuals who work as guidance counselors, librarians, and principals in schools as well as those who work for vocational/technical schools, two-year colleges, and four-year colleges.

Given that teachers typically receive summers off, the comparison of annual salaries is likely to overstate any teacher wage disadvantage. Thus, the dependent variable for the ordinary least squares regression analyses in this chapter is monthly salary. Monthly salaries of teachers were calculated by dividing annual salary by ten, since teachers typically are on a ten-month rather than a twelve-month contract (see, for example, Allegretto, Corcoran, and Mishel, 2004; Brewer, 1996).

Conceptual Framework and Methodology

One of the most important labor market outcomes that economists and sociologists seek to explain is the distribution of earnings among persons and/or groups in the labor force. A significant factor in this regard is education. In labor economics, two major theories explain the education, experience, and earnings relationship: human capital theory and signaling theory. According to labor economists who support human capital theory, the relationship between education and earnings is productivity. They argue that additional years of schooling increase an

individual's intellectual ability due to more years spent learning the knowledge and skills needed to be more productive at work (Becker, 1993).

However, not all economists agree with the human capital model. While not disagreeing that education in some cases does enhance job skills, other labor economists maintain that the primary reason education and earnings go hand-in-hand is because employers use education as a signal of productivity. At the time of hiring, employers are to a certain extent, unsure about applicants' actual levels of productivity. To improve the likelihood that the best worker is selected, firms use indicators, or signals, such as years of education, major field of degree, or quality of institution, to screen prospective workers into those who are most likely to be high- and low-productivity employees. Therefore these labor economists argue that the decision of which worker to hire is not based on consideration of who will work for the lowest wage but rather who is thought to be most trainable and subsequently productive (Kaufman and Hotckiss, 2006; Spence, 1973; Weiss, 1995). In his explanation of the signaling model, Stiglitz (1975) stated that screening information has important effects on the distribution of income because individuals who can be labeled as "more productive" are able to command a higher wage.

In sociology, credentialism, as described by Randall Collins (1971, 1981) is similar to the labor economics' signaling theory. Credentialism argues that the content and occupational significance of credentials are cultural and exclusionary rather than technical and efficient. Degree thresholds are more important in credentialed labor markets than are years of schooling and technical knowledge. In this respect, credentials signal technical competence in performing routine job tasks that are associated with the job or occupation position; in addition, credentials indicate compliance in the sense that they prove that not only that the person *can* do the job but that the person *will* do the job (Brown, 2001). Therefore, credentialism argues that increasing

education qualifications and degrees convey information about the underlying abilities, persistence, and cultural traits of a person, and hence individuals with more qualifications have greater earnings (Brown, 2001; Collins, 1971).

It is difficult to empirically measure the signaling ability of the education degree(s) because it is impossible to distinguish whether the monthly salary return is due to the signal (higher degree) or due to human capital (increase in knowledge and skills). Much of the research in labor economics that examines salary returns, therefore, illustrates the salary returns of certain degree thresholds and/or subject areas of degrees (i.e. investments in human capital). Therefore, drawing on basic insights from both, human capital and signaling theory, this chapter estimates the monthly salary returns to the education degree by examining their monthly salary returns in the teacher, education, and non-education labor markets using 1993 and 2003 data samples. If the monthly salary return to education degrees is higher in teaching than in non-teaching occupations, then according to human capital theory, the education degree provides skills that are particularly applicable to teaching. According to signaling theory, however, it suggests that employers view the education degree as a signal of good teaching. If, however, the monthly salary return to education degrees is higher in non-education sectors of employment compared to the education sector, then human capital theory suggests that the education degree may be cultivating skills usable and valuable in non-teaching careers. Signaling theory would suggest that employers may not consider the education degree as only a signal for good teaching skills, but perhaps a credential that implies skills instrumental in a variety of occupations.

For each year a separate ordinary least squares (OLS) model was examined as shown below:

$$\text{LN(Monthly Salary)}_t = \alpha + \beta_1(E_t) + \beta_2(T_t) + \beta_3(S_t) + \beta_4(I) + \beta_5(E_t * S_t) + \beta_4(I) + e_t \quad (4.1)$$

Where (t) = year (1993 and 2003).

Dependent Variable

- LN Monthly Salary

Independent Variables

- Highest Education: [E]
 - BA Education
 - MA Education
 - PhD Education
 - BA Degree (*BASELINE, MODELS 1,2, AND 3*)
 - MA Degree
 - PhD Degree
- Level of Teaching: [T]
 - Elementary Level (*BASELINE, MODEL 1*)
 - Secondary Level
- Sector of Employment: [S]
 - Education (Teachers)
 - Education (Non-Teachers)
 - Federal Government
 - State Government
 - Business Sector For-Profit (*BASELINE, MODELS 2 and 3*)
 - Business Sector Non-Profit
 - Business Sector Self-Employed
- Individual Controls: [I]
 - Female
 - Asian
 - Black
 - Hispanic
 - Other Race
 - Married
 - Spouse Work
 - 1-2 Children
 - More than 3 Children
 - Experience
 - Experience²
 - South
 - Midwest
 - West

However, equation (4.1) for each given year (1993 and 2003) was fitted three times separately for teachers (results in Table 4.5), and four times separately for non-teachers (results in Table 4.6), and the combined group of teachers and non-teachers (results in Table 4.7). In Table 4.5, measures pertaining to sector of employment were excluded because employed teachers who worked for K-12 schools were only included in this model. In Table 4.6, measures pertaining to teachers were excluded because this model only examined non-teachers. Table 4.7 includes all measures because teachers and non-teachers were included in the model. In all three models, the measures associated with highest education variable were included. The equation is fitted with dummy variables for highest education degree and interaction terms between highest education degree and sector of employment indicators (results in Tables 4.6 and 4.7), to determine which degree and employment combination, if any, significantly affects monthly salary return.

4.5: Findings

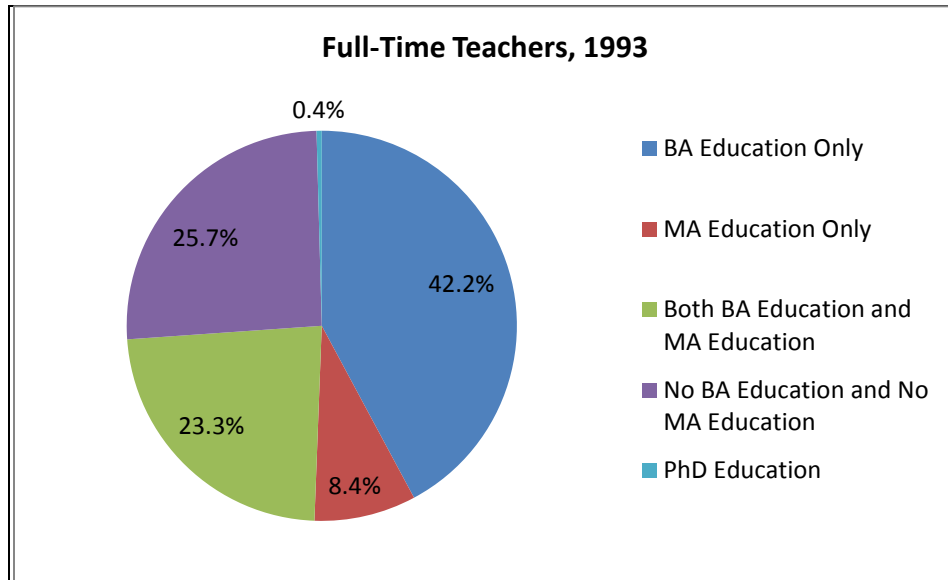
Descriptive Results

Figures 4.1 and 4.2 show the composition of the 1993 and 2003 NSCG samples. In total, the 1993 sample had 10,446 K-12 full-time employed teachers, defined as those who identified their full-time occupation as an elementary, middle, or secondary school teacher and whose employer was an elementary, middle, or secondary school, and the 2003 sample had 6,536 full-time employed teachers. Figure 4.2 shows that in the 1993 sample, 98,546 individuals were full-time employed in jobs other than K-12 teacher, and in the 2003 sample, 66,031 individuals worked full-time as non-teachers.

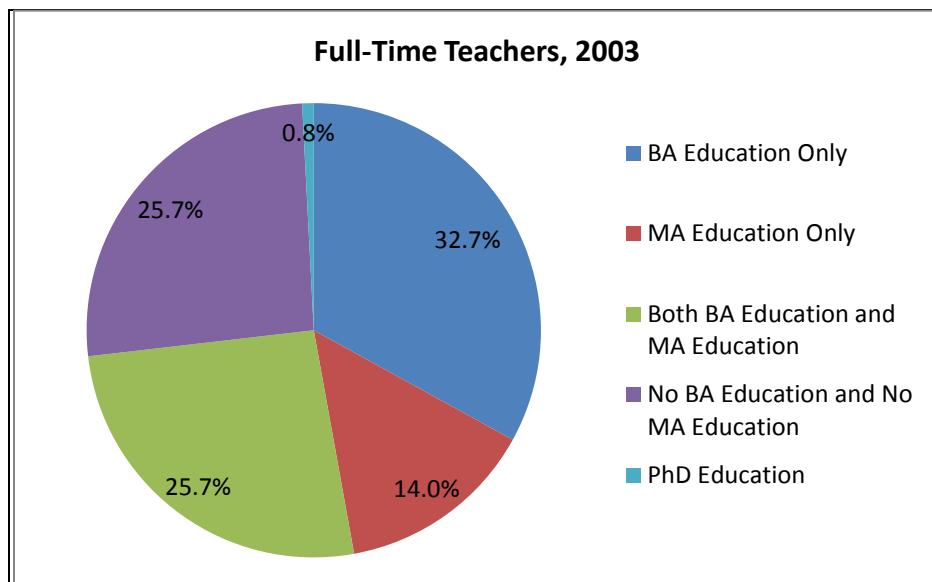
In addition, the figures show the sample results for the distribution of education degrees earned by both groups, teachers and non-teachers. In the 1993 sample, 73.9% of teachers had either a BA education (BA Educ.), MA education (MA Educ.) or both education degrees, but approximately a quarter of the sample of teachers had neither education degree. Figure 4.1 shows that a similar proportion of teachers obtained the same level of education, 72.4% of teachers had either a BA Educ., MA Educ. or both education degrees, and the same proportion of teachers had neither education degrees. The figures reveal a change in the distribution of education degrees among the teacher sample between 1993 and 2003. In 1993, a large proportion, 42.2%, of teachers had only a BA Educ. whereas this proportion decreased to 32.7% in 2003. Also by 2003, a larger proportion of teachers earned the MA Educ. than did in 1993. Less than a third of teachers had a MA Educ. in 1993; however, by 2003, almost 40% of teachers had MA Educ. On the other hand, figure 4.2 shows that in 1993, 9.3% of full-time workers had education degrees but did not work as teachers, whereas this proportion slightly decreased to 8% in 2003.

Figure 4.1: Distribution of Education Degrees among Full-Time Teachers , Sample 1993 and 2003

*Note: Percentages are weighted

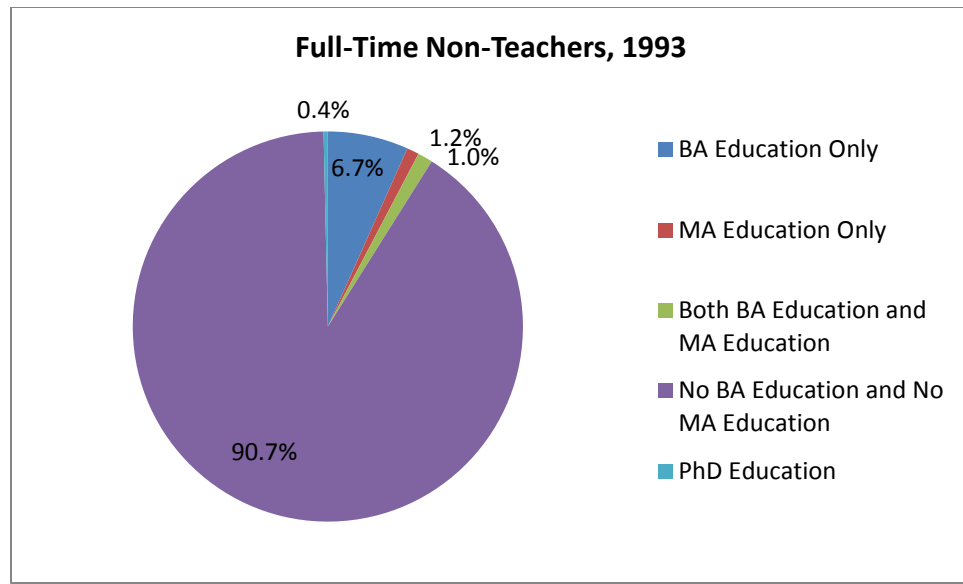


Sample N = 10,446

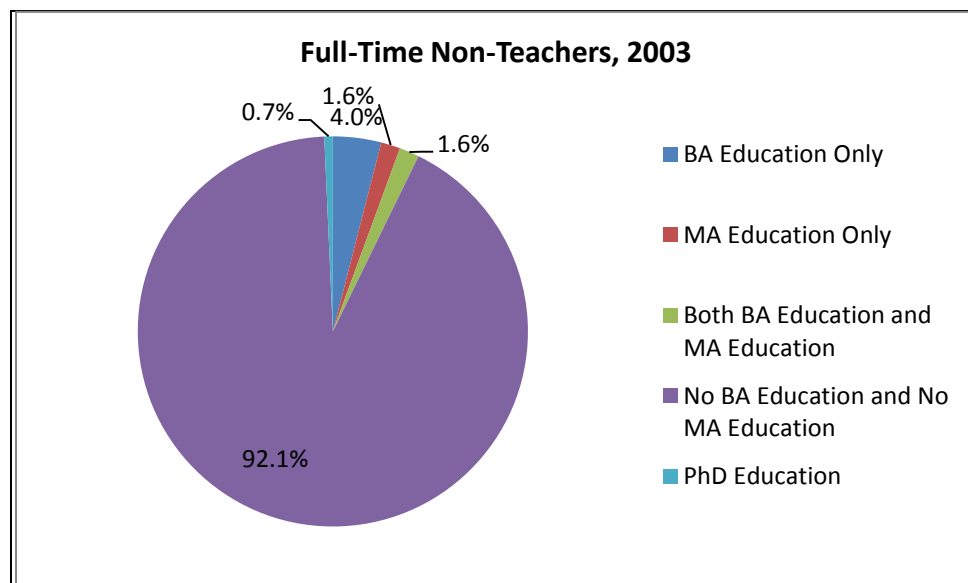


Sample N = 6,536

Figure 4.2: Distribution of Education Degrees among Non-Teachers, Sample 1993 and 2003



Sample N = 98,546



Sample N = 66,031

Tables 4.1 and 4.2 show the demographic distribution of full-time teachers as well as education degree recipients for the sample years. As expected, the majority of full-time teachers

were white, 86.1%, and female, 72.6%, for 1993 and 81.8% and 75.8% for 2003. The teacher labor force became slightly more diverse over these ten years but increasingly female, as seen in Chapter two. This same trend is evident among the various combinations of education degree recipients for both years. Although blacks and whites were unequally represented in teaching, interestingly, blacks and whites were equally likely to complete a MA Educ. after completing a BA Educ., 26.9% and 26.2% in 1993 and 38.7% and 38.4% in 2003, respectively.

In regards to education degree recipients, Tables 4.1 and 4.2 show that approximately 25% of those who had a BA Educ. also held a MA Educ. in 1993, and this proportion increased to 38% in 2003. Moreover, females were more likely to have both BA Educ. and MA. Educ. when compared to males. The highest proportion of males were in the MA Educ. recipients only, suggesting that males may choose to become teachers, more specifically secondary teachers, after completing their undergraduate education. Although not reported in Tables 4.1 and 4.2, there was more than three times the proportion of male secondary teachers compared to male elementary teachers; in 1993, 42% of secondary school teachers were male compared to 13% of elementary school teachers, and this same pattern was evident for the 2003 sample, when approximately 39% of secondary school teachers were male as compared to 14% of elementary school teachers.

Tables 4.1 and 4.2: The Composition of Full-Time Teachers and Education Degree Recipients, Sample 1993 and 2003

Table 4.1: 1993

	<u><i>Teachers</i></u>	<u><i>BA Education Recipients Only</i></u>	<u><i>Both BA and MA Education Recipients</i></u>	<u><i>MA Education Recipients Only</i></u>
<u><i>Married</i></u>	74.3% (n=7,547)	73.7% (n=7,930)	74.0% (n=2,644)	71.2% (n=1,325)
<u><i>Mean Age</i></u>	43.8*	44.1*	45.5*	46.0*
<u><i>White</i></u>	86.1% (n=7,193)	86.5% (n=7,794)	87.50% (n=2,760)	86.1% (n=1,339)
<u><i>Black</i></u>	8.8% (n=1,715)	8.1% (n=1,668)	8.8% (n=615)	8.1% (n=272)
<u><i>Hispanic</i></u>	3.7% (n=1,060)	3.1% (n=888)	2.4% (n=252)	3.6% (n=154)
<u><i>Asian</i></u>	1.1% (n=324)	1.9% (n=458)	0.9% (n=98)	2.0% (n=89)
<u><i>Female</i></u>	72.6% (n=7,361)	65.1% (n=6,937)	73.5% (n=2,703)	60.2% (n=1,117)
<u><i>Male</i></u>	27.4% (n=3,085)	34.9% (n=4,053)	26.5% (n=1,079)	39.8% (n=762)
<u><i>TOTAL</i></u>	n = 10,446	n = 10,990	n = 3,782	n = 1,879

Table 4.2: 2003

	<u><i>Teachers</i></u>	<u><i>BA Education Recipients Only</i></u>	<u><i>Both BA and MA Education Recipients</i></u>	<u><i>MA Education Recipients Only</i></u>
<u><i>Married</i></u>	75.0% (n=4,805)	74.2% (n=3,473)	77.2% (n=2,159)	70.7% (n=1,359)
<u><i>Mean Age</i></u>	44.1*	45.8*	46.9*	45.4*
<u><i>White</i></u>	81.8% (n=4,849)	83.2% (n=3,559)	85.2% (n=2,221)	79.3% (n=1,444)
<u><i>Black</i></u>	8.2% (n=670)	6.4% (n=428)	7.0% (n=270)	11.3% (n=230)
<u><i>Hispanic</i></u>	6.6% (n=626)	6.2% (n=415)	5.0% (n=211)	5.5% (n=158)
<u><i>Asian</i></u>	1.6% (n=128)	2.4% (n=192)	1.2% (n=56)	2.5% (n=88)
<u><i>Female</i></u>	75.8% (n=4,563)	70.0% (n=3,140)	75.1% (n=2,005)	62.7% (n=1,212)
<u><i>Male</i></u>	24.2% (n=1,973)	30.0% (n=1,636)	24.9% (n=831)	37.3% (n=757)
<u><i>TOTAL</i></u>	n = 6,536	n = 4,776	n = 2,836	n = 1,969

Note: The percentage for White, Black, Hispanic, and Asian does not sum to 100% because other race is not accounted.

Note: Percentages are weighted; * Significant at the 0.050 Level; n=sample size

Specifically examining American teachers, tables 4.3 and 4.4 show the demographic composition for the highest degrees obtained by them. In 1993, 42% of full-time teachers' highest degree was a BA Educ., while in 2003, 32% of full-time teachers' highest degree was a

BA Educ. A larger proportion of teachers' highest degree was a MA Educ. in 2003, 40%, compared to 31% in 1993. The proportion of teachers who had non-education degrees did not significantly change between 1993 and 2003.

When elementary and secondary school teachers are separately compared, a much larger proportion of elementary school teachers' highest degree was a BA Educ. In 1993, 50% of elementary school teachers' highest degree was a BA Educ., whereas only 35% of secondary teachers' highest degree was a BA Educ. In 2003, 40% of elementary school teachers' highest degree was a BA Educ., whereas 28% of secondary school teachers' highest degree was a BA Educ. More teachers were pursuing a MA Educ. For elementary school teachers in 1993, roughly 68% had a BA Educ, or a BA Educ. and MA Educ. In 2003, this proportion increased to 72%. For secondary school teachers, 41% had a BA Educ. or a BA Educ. and MA Educ. In 2003, this proportion increased to 50%. Thus, a majority of American teachers appear to be following the traditional teacher education route.

In addition, the majority of elementary school teachers studied education; only 15% of elementary school teachers had non-education degrees in 1993, and this proportion did not significantly change by 2003. However, 35% of secondary school teachers had non-education degrees in 1993, and this slightly decreased to 31% in 2003. The large proportion of secondary school teachers having non-education degrees is partly because for secondary school teaching, content knowledge is richer and more complex, and therefore secondary school teachers are required to have greater in-depth knowledge for a particular subject area. As a result, many secondary schools, public and private, will employ teachers who do not have the education degree but have a degree as long as they are certified to teach.

Tables 4.3 and 4.4: The Composition of the Total Teacher Sample by Highest Degrees in Education, Sample 1993 and 2003

4.3: 1993

<u>Highest Degree Type</u>	<u>Total</u>	<u>Married</u>	<u>Mean Age</u>	<u>White</u>	<u>Black</u>	<u>Hispanic</u>	<u>Asian</u>	<u>Female</u>	<u>Male</u>
<i>B.A. Education</i>	4,405	75.1%	43*	86.1%	8.8%	3.7%	1.2%	76.7%	23.3%
<i>M.A. Education</i>	3,313	73.4%	45*	90.0%	9.1%	2.9%	0.7%	76.8%	23.2%
<i>PhD Education</i>	45	64.8%	52*	86.1%	9.9%	1.9%	2.2%	63.4%	36.6%
<i>Other Degree(s)</i>	2,683	73.4%	44*	84.7%	8.4%	4.9%	1.6%	59.0%	41.0%
<i>Total</i>	10,446								

4.4: 2003

<u>Highest Degree Type</u>	<u>Total</u>	<u>Married</u>	<u>Mean Age</u>	<u>White</u>	<u>Black</u>	<u>Hispanic</u>	<u>Asian</u>	<u>Female</u>	<u>Male</u>
<i>B.A. Education</i>	2,136	77.0%	43*	82.5%	7.2%	7.1%	1.2%	80.5%	19.5%
<i>M.A. Education</i>	2,664	74.6%	45*	83.7%	8.7%	4.7%	1.4%	77.2%	22.8%
<i>PhD Education</i>	53	74.7%	50*	76.9%	8.2%	9.6%	1.4%	69.5%	30.5%
<i>Other Degree(s)</i>	1,683	71.9%	44*	76.5%	9.9%	8.5%	2.8%	64.4%	35.6%
<i>Total</i>	6,536								

Note: The percentage for White, Black, Hispanic, and Asian do not sum to 100% because mixed race/ethnicity is not accounted.

Note: Percentages are weighted; *Significant at the 0.05 Level

Since variations in the levels and type of education that American teachers have is evident, –the research questions *What are the differences in the monthly salary returns of those teachers who have degrees in education compared to those who do not hold degrees in*

education? Further: How are these differences explained? Finally: Are there significant differences in terms of teachers' highest degree level?--will be addressed. Given that teachers typically receive summers off, the comparison of annual salaries is likely to overstate any teacher wage disadvantage. Thus, this study compares monthly salaries of teachers by using a 10-month contract rather than a 12-month contract (see, for example, Allegretto, Corcoran, and Mishel, 2004; Brewer, 1996).

Figures 4.3 and 4.4 show the mean salaries (in 2000 dollars) of American teachers at different degree thresholds. The first point to note is that for both years, 1993 and 2003, and for both elementary and secondary school teachers, the mean salary of teachers whose highest degree was a MA Educ. was significantly higher than for teachers whose highest degree was a BA Educ ($p < 0.050$). In 1993, the mean salary for elementary school teachers whose highest degree was a BA Educ. was \$3,626 a month, compared to an average of \$4,348 earned by elementary teachers whose highest degree was a MA Educ. For secondary school teachers, the difference was quite similar: \$3,850 on average compared to \$4,502 on average. In 2003, the mean monthly salary for elementary school teachers whose highest degree was a BA Educ. did not increase much (it was \$3,690), but the salary for elementary school teachers whose highest degree was a MA Educ. increased even more between 1993 and 2003 to \$4,584. Thus, the mean monthly salary gap increased for elementary school teachers. The same trend is evident among secondary school teachers. In 2003, the mean salary for secondary school teachers whose highest degree was a BA Educ. was \$3,890, whereas the mean salary for those whose highest degree was a MA Educ. was \$4,715. Therefore, the value of the MA Educ. degree increased from 1993 to 2003 for both elementary and secondary school teachers.

In 1993, those teachers with non-education bachelor's degree(s) earned significantly more on average than teachers whose highest degree was a BA Educ. but significantly less than those teachers whose highest degree was a MA Educ. ($p < 0.050$). In 1993, the mean monthly salary of elementary teachers who had non-education bachelor's degrees was \$3,767 and secondary school teachers' mean monthly salary was \$3,981. In 2003, this trend reversed for elementary school teachers. Elementary school teachers with non-education bachelor's degrees earned significantly less compared to those whose highest degree was a BA Educ.; the mean salary of elementary school teachers with non-education degrees was \$3,478 ($p < 0.050$). However, the mean salary of secondary school teachers with non-education bachelor's degrees, \$4,017, was significantly more than those whose highest degree was a BA Educ ($p < 0.050$); but not significantly more or less than those whose highest degree was a MA Educ ($p > 0.050$).

The mean monthly salary of elementary and secondary school teachers whose highest degree was a PhD Educ. is significantly higher compared to the mean salaries of elementary school teachers whose highest degree was a BA Educ. or MA Educ. for both 1993 and 2003 ($p < 0.050$). However, when examining monthly salaries of secondary school teachers, those teachers whose highest degree was a PhD Educ. had a significantly higher monthly salary than those whose highest degree was a BA or MA Educ. in 1993, but not for those teachers whose highest degree was a MA Educ. in 2003.

Findings from Figures 4.3 and 4.4 illustrate that elementary and secondary teachers' salaries did not significantly change from 1993 to 2003. Although there were significant differences between teachers' salaries within a year, between 1993 and 2003, teachers' monthly salaries did not significantly change for the different degree thresholds. These figures do indicate, however, that there is a possible increase in the returns to the MA Educ. degree for both

elementary and secondary school teachers. The knowledge and skills learned in education degree programs may be more valuable than non-education because degrees because those teachers obtaining their MA Educ. are building on their knowledge and skills.

Certain aspects of the teacher labor market do affect teacher salaries. Union membership is one important aspect. Bough and Stone (1982) concluded that teacher unions increased salary. In addition, they noted that union membership offered an incentive for teachers to obtain graduate-level courses through increased pay. They examined the wage differences of non-union and unionized teachers from a national sample of American teachers and found that the union/non-union wage differential among teachers reached a twelve to twenty-two percent by the late 1970s and during the 1974-1978 the real wages of unionized teachers increased while those of non-unionized teachers decreased. In their examination of a national sample of teachers, Ballou and Podgursky (2002) also determined that unions not only increased teachers' salaries, but increased the rate of return to their tenure level. Thus, the salary structure of teachers is affected through the activity of unions.

Figures 4.3 and 4.4: Mean Salary for Full-Time Teachers by Highest Degree Type, Sample 1993 and 2003

*In 2000 PCE Dollars

Figure 4.3

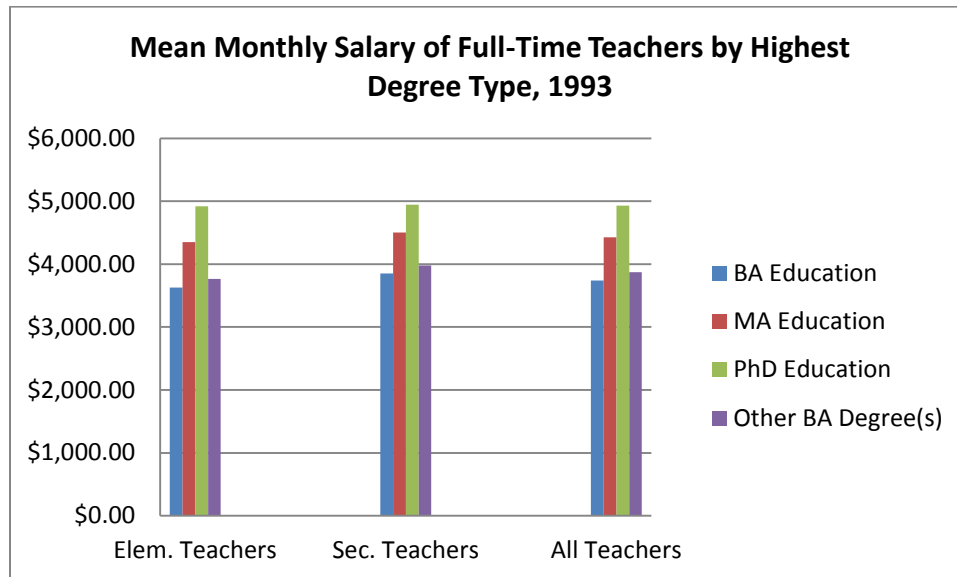
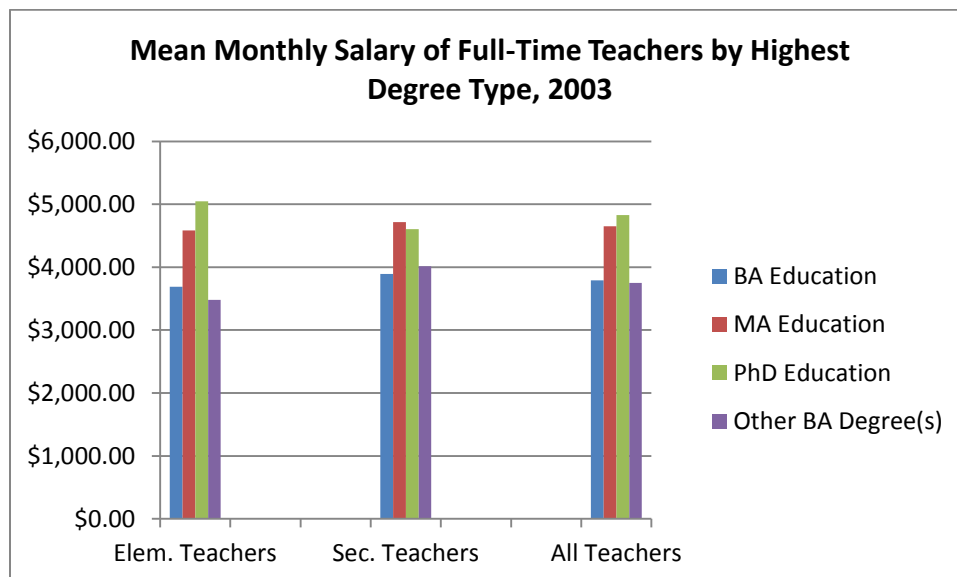


Figure 4.4



It appears that for teachers, obtaining the higher-level degrees in education increases monthly salary returns. However, as Figure 4.2 show almost ten percent of education degree

recipients do not work as teachers. Thus, it is necessary to examine the mean monthly salaries of education degree recipients not teaching to determine if they are not choosing to teach due to greater mean salaries in non-teaching fields. Figures 4.5 and 4.6 show the mean salaries of education degree recipients in five different sectors of employment: business and industry (including private sector for-profit, private sector not-for-profit, and the self-employed), federal government, state government, education non-teachers, and all teachers.

These figures illustrate three major findings. First, the federal government paid education degree recipients significantly more than any other sector in 1993 and 2003 ($p < 0.050$). In 1993, the mean monthly salary of BA Educ. recipients in the federal government was \$4,005, whereas in all other sectors, the mean monthly salary was below \$4,000. In 2003, the mean monthly salary was \$4,635, while in business/industry it was \$4,322, and below \$4,000 in the remaining sectors. In 2003, the mean salary of MA Educ. recipients in the federal government was \$5,576, and in 2003, it was \$5,815. Most of the jobs and professions that these BA and MA Educ. degree recipients were doing were related to computer programming and administration and management positions, which suggests that these individuals have knowledge and skills that were not acquired from their education degree programs and were able to find positions in which they could utilize these skills and earn more, on average.

Second, when mean monthly salaries are compared, teachers whose highest degree was a MA Educ. had a significantly higher monthly salary than those who worked in education but not as teachers, such as librarians and guidance counselors; in 1993, \$4,423 compared to \$4,032 ($p < 0.050$). Although this trend continued, teachers with MA Educ. did not earn significantly greater than non-teachers who worked in education ($p > 0.050$). Third, individuals who had non-education degrees and worked in business and industry earned significantly more, on average,

than individuals with a MA Educ. who worked in business and industry in both survey years ($p < 0.050$). A focus on mean monthly salaries reveals that the BA Educ. yields, on average, lower returns in these five major employment sectors than does the MA Educ., PhD Educ., and non-education degrees.

Figure 4.7 shows the percent change in mean monthly salaries between 1993 and 2003 for each education degree level in each sector of employment. The change in the monthly return to the BA Educ. and MA Educ. was positive over this decade. Thus, for teachers, obtaining the education degrees proved beneficial. On the other hand, the change in monthly return to the BA Educ. for education sector non-teachers was negative, suggesting that the BA Educ. decreased a person's likelihood of yielding a higher salary in education from the early 1990s to the early 2000s.

Figures 4.5 and 4.6: Mean Salary for Full-Time Employed by Sector and Highest Degree Type, Sample 1993 and 2003

*In 2000 PCE Dollars

Figure 4.5

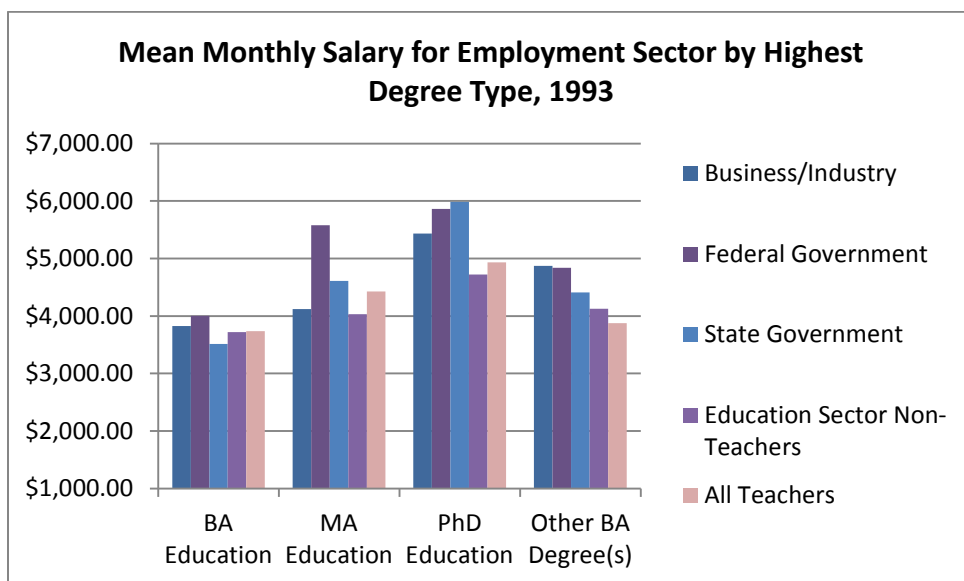


Figure 4.6

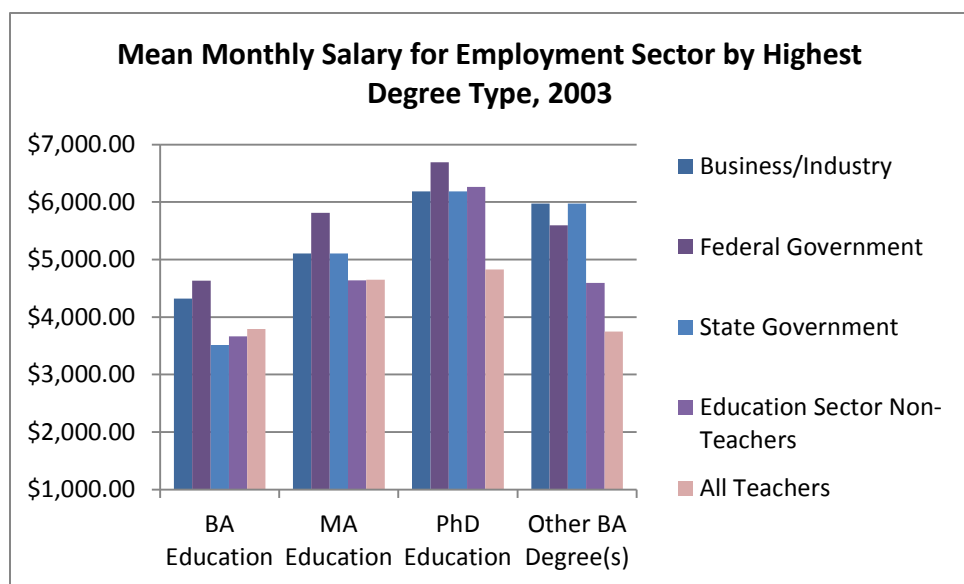
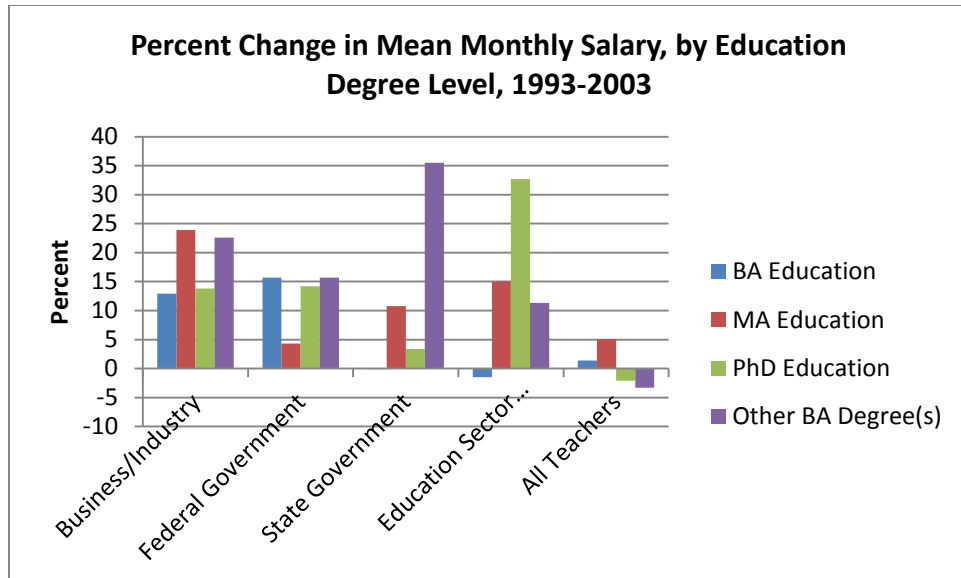


Figure 4.7: Percent Change in Mean Monthly Salaries, by Education Degree Level, 1993-2003



Regression Results and Discussion

Figures 4.3 through 4.7 illustrate a pattern in mean monthly salaries in absence of controlling for any factors such as age or experience. To better determine the factors that explain the variation in monthly teacher salary, ordinary least squares regression analyses were conducted controlling for the individual-level variables outlined earlier. Tables 4.5, 4.6, and 4.7 show the coefficient estimates for Equation (4.1). Equation (4.1) was fitted three times separately for teachers (Table 4.5), and four times separately for non-teachers (Table 4.6), and the combined group of teachers and non-teachers (Table 4.7). For each model in each table, the baseline reference category for highest education qualification is non-education bachelor's degree. In Tables 4.6 and 4.7, the baseline reference category for employment sector is private-business sector. The tables show results from only the full model.³ In addition, the findings in all three tables are robust to the individual-level controls related to gender (male), race/ethnicity (Asian, black, Hispanic, other race), relationship status (married), number of children (1 to 3 children, 4 or more than children), and years of experience, and controls for geographic region of work and residence (South, Midwest, West) (See Appendix, Tables A2, A3, and A4 for effects of these individual-level controls).

Table 4.5 shows the 1993 and 2003 coefficient estimates for highest degree earned and level of teaching while controlling for the individual-level factors. The reported coefficient estimates are added to the constant, the value for the non-education bachelor's degree. The effects of the independent variables show the effects of these variables relative to the constant. For example, the coefficient estimate for bachelor's degree in education is not 7.996 for 1993; instead it is the actual coefficient (0.032) added to the constant. Adding this to the constant results in 7.996 as reported. All effects in the table are presented in this same fashion. In

³ The step-wise regression results are reported in Tables A2, A3, and A4 in the Appendix.

examining only teachers, Table 4.5 shows that almost 25% of the variation in 1993 monthly teacher salary can be explained by the factors included in this model (Adjusted $R^2 = 0.248$). However, by 2003, the same factors only explain little over 10% -- 11.5% -- of the variation in monthly teacher salary (Adjusted $R^2 = 0.115$).

As expected, post-bachelor's degrees provided significantly greater returns to monthly teacher salary for both years. In 1993, teachers whose highest degree was a master's degree or doctorate earned above \$3,000 a month, on average, while teachers with a non-education bachelor's degree and bachelor's degree in education earned on average, \$2,875.55 and \$2,969.06, respectively, in 1993. By 2003, teachers, with at least a bachelor's degree earned slightly more than \$3,000, on average; however, those with more than a bachelor's degree earned nearly \$4,000, on average. Teachers whose highest degree was the master's degree in education earned the most; on average, \$4,125.74 a month.

The notable finding from Table 4.5 is that for both years, the bachelor's degree in education provided a higher return to monthly teacher salary than the non-education bachelor's degree did. In 1993, teachers with a bachelor's degree in education earned nearly \$100 more, on average, than teachers with a non-education bachelor's degree; and approximately \$200 more, on average, by 2003. The increase in return to the bachelor's degree in education was 15.72% over this decade.

Since elementary teachers and secondary teachers differ in regards to their education requirements, training, and work duties, Table 4.5 also shows that secondary school teachers earned more than elementary school teachers in both 1993 and 2003. Moreover, the level of teaching had a greater impact on monthly salary by 2003, when secondary school teachers earned \$172.53 more, on average, than elementary school teachers compared to in 1993, when

secondary school teachers earned only \$79.00 more, on average, than elementary school teachers. The return to being a secondary school teacher increased by 15.26% over the decade.

Even when controlling for level of teaching, years of experience, and other individual-level characteristics, the results of Table 4.5 show that teacher educational qualifications matter. First, the bachelor's degree in education provided a greater return than the non-education bachelor's degree. Second, the master's degree in education was significant and provided the largest boost in monthly salary ($p < 0.0001$). These findings support the notion that the education degree(s) offer significant returns to monthly teacher salary, and the rate of this return increased from 1993 to 2003. Thus, the specific education training – human capital -- paid off in the teacher labor market by the early twenty-first century.

Table 4.5: Dependent Variable: LN Monthly Salary; Only Teachers, 1993 and 2003

	1993	2003	<i>Percent Change</i>
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Highest Degree Earned			
<i>BA Educ.</i>	7.996 ^{***} (\$2,969.06)	8.142 ^{***} (\$3,435.78)	15.72
<i>MA Educ.</i>	8.144 ^{***} (\$3,442.66)	8.325 ^{***} (\$4,125.74)	19.84
<i>PhD Educ.</i>	8.100 [*] (\$3,294.46)	8.167 (\$3,522.76)	6.93
<i>MA Degree</i>	8.137 ^{***} (\$3,418.64)	8.285 ^{***} (\$3,963.96)	15.95
<i>PhD Degree</i>	8.011 (\$3,013.93)	8.226 (\$3,736.85)	23.99
Level of Teaching			
<i>Secondary</i>	7.991 ^{***} (\$2,954.27)	8.133 ^{**} (\$3,404.99)	15.26
<i>Constant</i>	7.964 ^{***} (\$2,875.55)	8.081 ^{***} (\$3,232.46)	12.41
<i>Adjusted R²</i>	0.248	0.115	
<i>R²</i>	0.246	0.113	
<i>F-Value</i>	172.09 ^{***}	42.62 ^{***}	

*** Significant at the 0.0001 ** Significant at the 0.001 * Significant at the 0.010; Standard Errors shown in Parentheses

Note: Reported results are the coefficient estimates are subject to the individual- and geographic-level control variables as noted in the methodology. Full regression results are displayed in the appendix, Table A1.

Note: The coefficient estimates reported are added to the constant. The effects of the independent variables show the effects of these variables relative to the constant. For example, the coefficient estimates is not 7.996 for BA Educ. for 1993, instead it is the actual coefficient added to the constant. The actual coefficient is 0.032. Adding this to the constant, 7.964, results in 7.996 as reported. All effects in the table are presented in this same fashion.

Focusing on the salary returns of education degree recipients in the non-teacher labor market, Table 4.6 shows the results of the ordinary least squares regression analyses examining all full-time working individuals. Those individuals who had professional degrees, such as law (J.D.), medical (M.D), or business degrees (M.B.A.) were not included in these regression analyses. These individuals were not included because their educational qualifications suit them for certain and specific higher-paying careers that would bias the regression results. The baseline reference category for highest degree earned is non-education bachelor's degree and private-business sector for employment sector.

As in Table 4.5, results in Table 4.6 are also robust to individual-level controls not shown in the table (see Table A3 in Appendix). Table 4.6 displays the coefficient estimates for highest education qualification, sector of employment and interaction terms for bachelor's in education

degree, master's in education degree, and sector of employment. These interaction terms capture the effect of having an education degree and its effect on working in a particular sector employment. The second research question: *What are the differences in the monthly salary returns of those who have degrees in education and work in education sector compared to those who have degrees in education and work outside the education sector?* is answered by examining the results of Table 4.6. The coefficient estimates reported are added to the constant. The effects of the independent variables show the effects of these variables relative to the constant. For example, the coefficient estimate for bachelor's in education is not 7.827 for 1993; instead it is the actual coefficient (-0.253) added to the constant. Adding this to the constant results in 7.827 as reported. All effects in the table are presented in this same fashion.

First, for both 1993 and 2003, those who had a bachelor's in education degree and worked in the private-business sector earned significantly less than non-education bachelor's degree recipients did; in 1993, a non-education bachelor's degree recipient earned \$3,229.23 on average, compared to a bachelor's in education degree recipient who earned \$2,507.39 on average. By 2003, the gap in salary in the private-business sector increased; a non-education bachelor's degree recipient earned \$3,869.96 on average while a bachelor's in education degree recipient earned below \$3,000.

It is clear that bachelor's in education degree recipients earned less than non-education bachelor's degree recipients in the private-business sector, and Table 4.6 shows that compared to non-education bachelor's degree recipients, bachelor's in education degree recipients had significantly lower average monthly salaries in all of the other non-teaching occupations. For example, in 1993, an individual with a non-education bachelor's degree who worked in the federal government earned \$2,638.59, on average, while a person with a bachelor's in education

degree who worked in the federal government earned \$2,268.78, on average. This same pattern is evident among those who worked for the state government and the other business sectors.

Even working in education as non-teachers, non-education bachelor's degree recipients earned more, on average, than bachelor's in education degree recipients. In 1993, a person with a non-education bachelor's degree who worked in education earned \$2,581.17, on average, while a person with a bachelor's in education degree earned \$2,423.58. By 2003, those bachelor's in education degree recipients who worked in education continued to earn less than those who worked in other sectors; however, the gap between the non-education bachelor's degree recipients and bachelor in education degree recipients decreased. A person with a non-education bachelor's degree who worked in education earned \$86.90 more monthly, on average, compared to in 1993 when a person with a non-education bachelor's degree earned \$157.59 more monthly, on average.

For each sector of employment, an individual with a bachelor's in education degree earned significantly less on average than a person with a non-education bachelor's degree. This pattern of bachelor's in education degree recipients earning less than non-education bachelor's degree recipients do for each sector of employment is true for both 1993 and 2003. The results of Table 4.6 illustrate that those who have degrees in education and worked in education earned more than their bachelor's in education degree counterparts who worked in other sectors employment; however, they earned less, on average, than their non-education bachelor's degree counterparts who worked in the other sectors of employment.

Table 4.6: Dependent Variable: LN Monthly Salary; Non-Teachers, 1993 and 2003

	1993	2003	<i>Percent Change</i>
Highest Degree Earned			

<i>BA Educ.</i>	7.827*** (\$2,507.39)	7.968*** (\$2,887.07)	15.14
<i>MA Educ.</i>	8.182* (\$3,575.99)	8.118*** (\$3,354.31)	-6.20
<i>PhD Educ.</i>	8.225*** (\$3,733.12)	8.480*** (\$4,817.45)	29.04
<i>MA Degree</i>	8.190*** (\$3,604.72)	8.345*** (\$4,209.08)	16.76
<i>PhD Degree</i>	8.294*** (\$3,999.80)	8.481*** (\$4,822.27)	20.56
Employment Sector			
<i>Federal</i>	7.878*** (\$2,638.59)	8.051*** (\$3,136.93)	18.88
<i>State</i>	8.878*** (\$2,638.59)	7.996*** (\$2,969.05)	12.52
<i>Business NP</i>	7.868*** (\$2,612.33)	8.054*** (\$3,146.35)	20.44
<i>Business SE</i>	8.127*** (\$3,384.63)	7.991*** (\$2,954.25)	-12.71
<i>Education (Non-Teachers)</i>	7.856*** (\$2,581.17)	7.954*** (\$2,846.94)	10.29
Highest Degree*Sector			
<i>BA Educ.*Federal</i>	7.727*** (\$2,268.78)	7.931** (\$2,782.20)	22.63
<i>BA Educ.*State</i>	7.750*** (\$2,321.57)	7.825** (\$2,502.39)	7.78
<i>BA Educ.*Business NP</i>	7.616 (\$2,030.42)	7.585** (\$1,968.44)	-3.05
<i>BA Educ.*Business SE</i>	7.959*** (\$2,861.21)	7.802 (\$2,445.48)	-14.53
<i>BA Educ.*Education</i>	7.793*** (\$2,423.58)	7.923*** (\$2,760.04)	13.88
<i>MA Educ.*Federal</i>	8.019 (\$3,038.14)	8.124 (\$3,374.49)	11.07
<i>MA Educ.*State</i>	8.058 (\$3,158.97)	8.028* (\$3,065.60)	-2.95
<i>MA Educ.*Business NP</i>	7.982 (\$2,927.78)	8.034 (\$3,084.05)	5.33
<i>MA Educ.*Business SE</i>	8.236 (\$3,744)	7.667 (\$2,136.66)	-42.94
<i>MA Educ.*Education</i>	8.076*** (\$3,216.34)	8.099*** (\$3,291.17)	2.32
Constant	8.080*** (\$3,229.23)	8.261*** (\$3,869.96)	19.84
Adjusted R²	0.178	0.119	
R²			
F-Value	628.48***	262.20***	

*** Significant at the 0.0001 ** Significant at the 0.001 * Significant at the 0.010; Standard Errors shown in Parentheses

Note: Reported results are the coefficient estimates are subject to the individual- and geographic-level control variables as noted in the methodology. Full regression results are displayed in the appendix, Table A2.

Note: The coefficient estimates reported are added to the constant. The effects of the independent variables show the effects of these variables relative to the constant. For example, the coefficient estimates is not 7.827 for BA Educ. for 1993, instead it is the actual coefficient added to the constant. The actual coefficient is -0.253. Adding this to the constant, 8.080, results in 7.827 as reported. All effects in the table are presented in this same fashion.

Focusing on the salary returns of education degree recipients in the labor market, Table 4.7 shows the coefficient estimates of the ordinary least squares regression analyses examining all full-time working individuals – teachers and non-teachers. The coefficient estimates reported

are added to the constant. The effects of the independent variables show the effects of these variables relative to the constant. For example, the coefficient estimate for bachelor's degree in education is not 7.835 in 1993; instead it is the actual coefficient (-0.255) added to the constant. Adding this to the constant results in 7.835 as reported. All effects in the table are presented in this same manner.

The results of Table 4.7 are similar those in Table 4.6; bachelor's in education degree recipients earned significantly less than non-education bachelor's degree recipients for both years, for all sectors of employment except for teaching. Those individuals whose highest degree was a bachelor's in education and who worked as teachers earned more, on average, than those who had non-education bachelor's degree as their highest degree and worked as teachers, for both years. In 1993, bachelor's in education degree recipients who worked as teachers earned \$2,776.65, on average, while non-education bachelor's degree recipients earned \$2,713.51 on average. Thus, a bachelor's in education degree recipient earned \$63.14 more on average. By 2003, the gap nearly doubled, a bachelor's in education degree recipient earned \$108.41 earned more, on average, than a non-education bachelor's degree recipient who worked as a teacher.

Not only did teachers with bachelor's degrees in education earn more than teachers with non-education bachelor's degrees, but among all bachelors in education degree recipients, those who worked as teachers, earned the most for both years. The bachelor's in education degree recipients who worked as teachers had a significantly higher salary than those who worked as non-teachers. However, it should be noted that those individuals whose highest degree was a bachelor's in education degree and worked as non-teachers in education earned less, on average,

than those whose highest degree was a non-education bachelor's degree and who worked in education as non-teachers.

Table 4.7: Dependent Variable: LN Monthly Salary; Teachers and Non-Teachers, 1993 and 2003

	1993	2003	Percent Change
Highest Degree Earned			
BA Educ.	7.835*** (\$2,527.53)	7.988*** (\$2,945.40)	16.53
MA Educ.	8.192* (\$3,575.99)	8.139*** (\$3,425.49)	-5.16
PhD Educ.	8.234*** (\$3,766.87)	8.489*** (\$4,861.00)	29.04
MA Degree	8.205*** (\$3,659.20)	8.374*** (\$4,332.93)	18.41
PhD Degree	8.303*** (\$4,035.96)	8.501*** (\$4,919.69)	21.89
Employment Sector			
Federal	7.865*** (\$2,604.51)	8.084*** (\$3,242.17)	24.48
State	7.883*** (\$2,651.82)	8.015*** (\$3,026.01)	14.11
Business NP	7.874*** (\$2,628.05)	8.072*** (\$3,203.50)	21.89
Business SE	8.136*** (\$3,415.23)	8.012*** (\$3,016.94)	-11.66
Education (Non-Teachers)	7.861*** (\$2,594.11)	7.971*** (\$2,895.75)	11.62
Education (Teachers)	7.906*** (\$2,713.51)	7.937*** (\$2,798.95)	3.15
Highest Degree* Sector			
BA Educ.*Federal	7.711*** (\$2,233.77)	7.962** (\$2,869.80)	28.53
BA Educ.*State	7.752*** (\$2,326.22)	7.842** (\$2,545.29)	9.41
BA Educ.*Business NP	7.620 (\$2,038.56)	7.601** (\$2,000.19)	-1.88
BA Educ.*Business SE	7.966*** (\$2,881.31)	7.611* (\$2,020.29)	-29.88
BA Educ.*Education (Non-Teachers)	7.796*** (\$2,430.86)	7.940*** (\$2,807.36)	15.49
BA Educ.*Education (Teachers)	7.929*** (\$2,776.65)	7.975*** (\$2,907.36)	4.70
MA Educ.*Federal	8.005 (\$2,995.90)	8.158 (\$3,491.19)	16.53
MA Educ.*State	8.064 (\$3,177.98)	8.048* (\$3,127.53)	-1.59
MA Educ.*Business NP	7.988 (\$2,945.40)	8.052 (\$3,140.07)	6.61
MA Educ.*Business SE	8.243 (\$3,800.92)	7.689 (\$2,184.18)	-42.54
MA Educ.*Education (Non-Teachers)	8.083*** (\$3,238.94)	8.120*** (\$3,361.02)	3.77
MA Educ.*Education (Teachers)	8.172*** (\$3,540.42)	8.169*** (\$3,529.81)	-0.30
Constant	8.090*** (\$3,261.69)	8.261*** (\$3,869.96)	21.28
Adjusted R²			
R²	0.178	0.119	
F-Value	628.48***	262.20***	

*** Significant at the 0.0001 ** Significant at the 0.001 * Significant at the 0.010; Standard Errors shown in Parentheses

Note: Reported results are the coefficient estimates are subject to the individual- and geographic-level control variables as noted in the methodology. Full regression results are displayed in the appendix, Table A3.

Note: The coefficient estimates reported are added to the constant. The effects of the independent variables show the effects of these variables relative to the constant. For example, the coefficient estimates is not 7.835 for BA Educ. for 1993, instead it is the actual coefficient added to the constant. The actual coefficient is -0.255. Adding this to the constant, 8.090, results in 7.835 as reported. All effects in the table are presented in this same fashion.

4.6: Concluding Remarks

The purpose of this chapter was to determine the salary returns to the education degree in the various sectors of the economy. The findings show that the bachelor's and master's degrees in education yield significant salary returns in the American teacher labor market, but outside of teaching, the education degrees yield a lower salary in each sector of employment compared to a non-education bachelor's degree. Consistent with human capital theory, this finding suggests that education degrees may provide the necessary human capital for being a teacher. Furthermore, this also suggests that there may be positive selection of teachers -- those bachelor's in education degree recipients who worked as teachers earned more, on average, than those who were in non-teaching occupations. Thus, the "best" teachers may already be in the classroom. Therefore, the bachelor's in education degree recipients who were not teaching either never entered the teacher labor market or might have voluntarily left teaching -- not because of higher pay though -- or might have been forced to leave teaching due to not obtaining tenure. The exact reason is not known.

However, consistent with signaling theory, the findings suggest that the bachelor's in education degree may be the signal that indicates "good teaching." Although it is also important to note that teacher certification, might, in fact, be the signal. In their research on teacher unions, Baugh and Stone (1982) noted that unionized teachers had some incentive to take graduate-level coursework in education, but the actual contribution of this coursework to the enhancement of good teaching skills was questionable. Furthermore, Goldhaber and Brewer (2000) found that teacher certification has little bearing on student achievement while Darling-Hammond (2001) asserted that teachers with standard certification and those who have more education training appear to do better in producing student achievement. Thus, the finding that the bachelor's in education and the master's in education degrees yielded the highest monthly salary returns, on

average, could be due to the fact that these teachers tended to also have certification, even if the outcomes in student achievement were questionable.

In most discussions of educational reform, in which key goals are improving student achievement and ensuring qualified teachers in every classroom, teacher salary is an often discussed avenue for change with the possibility of supporting both those goals. In fact, a recent *New York Times* article reported that in order to improve American public schools, the United States needs to raise the status of the teaching profession by recruiting more qualified candidates, training them better and paying them more (Dillon, 2011, p. A22). The findings of this chapter show that education degree recipients, more specifically those who have master's in education degrees, increased their monthly salary returns by working as teachers. In the overall labor market, the education degrees do not produce as great returns as non-education degrees, however working as teachers was the most lucrative than in non-education sectors. As Arcidiacono (2004) notes however, "we do not know whether these are actual monetary premiums or whether the observed premiums are driven by the differing abilities of individuals choosing the different majors," (p. 343).

4.7: Further Research

While the findings of this chapter show that the bachelor's in education degree yields the highest return in teaching, further research should determine if it is in fact, the education degree or whether it is teacher certification that contributes to the return. By including this information, then salary differences between bachelor's in education degree recipients and non-education bachelor's degree recipients can be clarified. For example, even when controlling for

certification, if bachelor's in education degree recipients continue to have significantly higher returns than non-education bachelor's degree recipients, then human capital theory can be further supported. However, if significant salary differences do not exist between bachelors in education degree recipients and non-education bachelor's degree recipients, then teacher certification might be a particular signal that contributes to greater returns in teacher salary. However, school administrators' preferences may play a role because school principals and superintendents who hire teachers may believe the education degrees make a teacher more effective, even if there is no basis in fact for that belief.

Examining the "quality" of teachers is another area that needs to be explored in further research. In order to more accurately confirm that positive selection of teachers does occur, it is necessary to distinguish between the bachelor's in education degree recipients who work as teachers and those who do not work as teachers. Are the bachelor's in education degree recipients who work as teachers, in fact, the "high-quality" teachers? In order to better understand this, more information in regards to the academic characteristics of bachelor's in education degree recipients needs to be collected, such as high school grade point average, ACT score, quality of undergraduate institution, and undergraduate grade point average. Moreover, the bachelor's in education degree recipients who did not work as teachers needs to be better understood. Did these individuals ever work as teachers? Did they voluntarily choose not to teach or leave teaching? Understanding the characteristics of the bachelor's in education degree recipients can provide a greater understanding of the teacher labor market.

Additionally, other research questions have developed due to the findings of this chapter. For example, it would be useful to more closely examine the differences in gender and ascertain whether the advanced degree(s) in education reduce the gender wage gap in within teaching.

Also, factors related to the quality of the post-secondary institution should be included in the future studies, as it may be significantly related to monthly salary returns of education degree recipients. It would also be valuable to narrow the analysis by geographic region to determine if this affects the salaries of education degree recipients in teaching, education, and non-education occupations. Finally, the results of this chapter did not distinguish between private school and public school teachers, it would be useful to distinguish between the two types of teachers as private school teachers often times earn less than public school teachers.

CHAPTER FIVE

CONCLUDING REMARKS

5.1: Summary of Findings

This dissertation is a historical analysis of the trends in the social characteristics of American teachers over the second half of the twentieth century. The findings illustrate regional convergence patterns over this period. Interviewing former and current teachers in order to understand their social characteristics and experiences is one way to learn, understand, and write about their stories. However, the quantitative findings of this dissertation provide support for institutional isomorphism and subsequently, regional convergence in the social characteristics and experiences of teachers.

The social characteristics of American teachers during the second half of the twentieth century was the focus of Chapter Two. The purpose of Chapter Two was to use census data obtained from the Integrated Public Use Microdata Series (IPUMS-USA) to identify important *consistencies* and *changes* in the social characteristics of American teachers during the second half of the twentieth century. Furthermore, similarities and differences between the five major geographic regions (North, South, Plains, Mountain, and Pacific) of the United States were explored. Previous research examined and explained the differences between the North and South and causes for differing rates in the transformation of American teacher labor force from a male-dominated occupation to a female-dominated occupation during the nineteenth and early twentieth century (see, for example, Perlmann and Margo, 2001; Rury, 1989). The descriptive findings of Chapter Two illustrate very little regional variation in the feminization of teaching across the five geographic regions of the United States throughout the second half of the twentieth century; the proportion of American teachers who were women was consistently 75% to 80% of American teachers across the five geographic regions. Thus, the important findings of

Chapter Two are: (1) although, teaching has been a female-dominated occupation since the latter years of the nineteenth century, beginning in the 1950s, it became a stable occupation for women because, with the lift of the marriage bar in the 1950s, the majority of women teachers continued to work after marriage and childbearing, unlike their predecessors and (2) as a result of women remaining longer in the occupation, the mean age of American teachers increased over time across all five geographic regions. Therefore, during the second half of the twentieth century, women teachers had a more continuous and stable work-life rather than a pattern of intermittent labor force participation. Also, the attitudes of women teachers toward teaching changed; they began to view teaching as full-time, long-term work and this view was shared by women across the nation.

The focus of Chapter Three was to examine the dynamics of race, place, and employment by examining the changing employment of black teachers across the sixteen Southern states from 1940-1980. Previous education research has qualitatively examined the dismissal and demotion of black teachers after the *Brown* (1954) decision and the Civil Rights Act (1964) (see, for example, Fairclough, 2007; Siddle-Walker, 1996, 2000). However, Chapter Three used state-level data obtained from IPUMS-USA and quantitatively examined the differences in employment experiences of black teachers after desegregation between the Deep South, Upper South, and Border States. A fixed-effects regression analysis was conducted with [black students-to-black teacher] ratio as the dependent variable. This student-to-teacher ratio was used as the dependent variable in order to understand how the distribution of black students per black teacher changed over this period and across the three southern sub-regions. A fixed-effects regression has the attractive feature of controlling for all time-invariant characteristics of the states, whether measured or not. For example, state characteristics that are considered time-

invariant are location and political climate of the state. The important findings of Chapter Three are: (1) between 1960 and 1980, there was an absolute increase in the number of both black and white teachers; and (2) by 1970, there was a significant increase in the [black students-to-black teacher] ratio across the South, as a whole region, but the increase was most pronounced in the Deep South compared to the Upper South and Border States, which suggests a relative loss in black teachers in this sub-region, especially after the 1964 Civil Rights Act.

The findings of Chapter Three showed that, while both black and white teachers gained jobs in the post-*Brown* (1954) era, the rate at which white teachers were hired was greater than that of black teachers across the three Southern sub-regions. Thus, there was a relative loss of black teachers across the sub-regions, not an absolute loss. Much of the prior qualitative research on black teachers in the desegregated South focused on the dismissals of black teachers, thus suggesting there was a loss in the absolute number of black teachers. Some previous literature, however, has pointed to the fact that many black teachers continued to work but were demoted to be either teacher assistants or help with “difficult” students (see, for example, Fultz, 2004). Moreover, prior research failed to address the hiring of more white teachers. The findings from Chapter Three suggest that the desegregated school system of the South tended to favor white teachers as new hires since the mean age of white teachers decreased, suggesting more younger white teachers were hired.

Chapter Four of this dissertation examined the differences in the monthly salary returns of education degree recipients who worked as teachers, worked in the education sector, and worked outside the education sector. This chapter utilized multivariate regression analyses using individual-level data obtained from the National Survey of College Graduates (NSCG, 1993 and 2003). The purpose of this chapter was to understand the monthly salary returns to the education

degree, the primary educational qualification of teachers, in teaching and outside of teaching, in order to better understand the value of the education degree. The key findings from this chapter that are important to restate are (1) the education degree offers a significant high return in the teacher labor market, and the effect of those returns increased from 1993 to 2003 and (2) individuals with bachelor's in education degrees who worked as teachers had higher monthly salaries, on average, than their bachelor's in education degree counterparts who worked as non-teachers and (3) individuals with a bachelor's in education degree and who worked in non-teaching sectors had lower monthly salaries, on average, compared to those with non-education bachelor's degrees who worked in those same sectors.

The homogeneity, not variation, in the operations and practices of organizations, and subsequently within the profession of teaching, is a result of institutional isomorphism. DiMaggio and Powell (1983) explained that the emergence and structure of an organizational field, like education, is a result of the activities of a diverse set of organizations; and second, the homogenization of these organizations results in the homogenization of its new entrants as well, once the field (education) is established. The placement of schools of education, or the training and human capital development of teachers, in the university setting added to the creation of a national teacher labor force. The result is this national trend of a female-dominated and an overwhelmingly white occupation. In regards to future research on American teachers, there are important implications due to this finding of the homogenization of the American teacher labor force, over time and across the various geographic regions, as a result of institutional isomorphism.

5.2 Study Limitations and Future Research on American Teachers

Gender

The gender composition of the American teacher labor market is not a highly studied aspect of contemporary education research. Teaching became a women's occupation in part because of a need for a full-time teaching staff, and women were an available resource that cost less money than men, who left teaching for other more lucrative occupations and professions. For many men, the "opportunity cost" of being full-time teachers was too great. Teaching was a satisfactory occupation option for women because it prepared young single women to be "good mothers." Thus, single, educated women were given the opportunity to work outside the home for pay as well as prepare for their long-term careers, to be wives and mothers.

During the middle of the twentieth century, the inclusion of married women into the American labor force gave them economic independence. The lifting of the marriage bar is arguably the greatest factor in increasing women's access to stable teaching jobs (Goldin, 1990). Early into the twenty-first century, women were attending post-secondary institutions at higher rates than men and working to varying degrees in most sectors of the economy, including many where they had been virtually absent (Apple, 1985; Bacalod, 1997). Yet even the most positive changes can be incomplete or unsatisfactory; this particular advancement is limited in two ways. First, women are still under-represented in the top positions of many businesses, companies, and firms, and second, women are over-represented in certain occupations, such as teaching, childcare, and nursing, that are assumed to require more compassion, nurturance, and personal communication skills, traits commonly assigned to women at higher rates than they are to men.

One of the limitations of Chapter Two is that given my data, I cannot prove that men have been or are directly affected by the consistently female-dominated occupation. Although I confirm the consistency in the gender composition of the teacher labor force throughout the second half of the twentieth century and across all geographic regions, I do not prove that this sends a quiet message to young girls and boys that teaching may be simply a more suitable occupation for women than for men, hence the continued cycle of women teachers over the past century. Gender socialization theory does not assume that rational, income-maximizing motivations lead to sex-based differences in behavior but instead argues that early childhood experiences teach children gender-based appropriate behavior (Tomaskovic-Devey, 1993). For example, girls are socialized primarily for adult roles as family caretakers and nurturers. The feminization of teaching, may influence the gender socialization of children, and thus have an effect on the equality of opportunities between the sexes. These socialization patterns need to be changed in order to change the way gender inequality manifests itself in the labor market, specifically the teacher labor market. The descriptive results of Chapter Two provide a basis for more research on the gender socialization patterns within the American school system. In order to fully determine if, in fact, the female-dominated profession sends a silent message to young girls and boys in regards to teaching being a profession better suited for women, there is a need to more closely observe teacher practices in addition to administering surveys to students and teachers to learn about their perceptions about their occupation.

Race

Although the relative proportion of black teachers decreased after desegregation in the South, the findings from Chapter Three support the notion that the reason for the decline in the proportion of black teachers could have been due to a number of factors including: the dismissal, demotion, or voluntary exits of black teachers, the smaller number of blacks relative to whites choosing teaching, or the relatively increased hiring of white teachers across the Southern states to meet the need to educate growing numbers of students. Therefore, one of the limitations of Chapter Three's study is that I do not clearly prove if black teachers were being discriminated against during the hiring process, therefore not hired at the same rate as white teachers, or if fewer blacks were choosing teaching as a profession in general. However, future research can determine if the relative number of blacks not choosing teaching and working in other professions increased over this period in the South. If this is the case, this further supports that fewer educated blacks were choosing teaching.

Although desegregation was a positive effort toward racial integration, it also came with an incomplete or unsatisfactory result – an overwhelmingly white teacher labor force. Decades after the *Brown* (1954) decision, the United States is now far more racially and ethnically diverse, and there is a continuing racial transformation of American schools in regards to students but not in regards to the teachers (Orfield and Lee, 2004). With the closing of all-black schools and the hiring of new white teachers in the years immediately after *Brown's* (1954) implementation, young black students may have been introduced to the notion that their former black teachers were not worthy of teaching in the newly-integrated schools. As a result, black students may have viewed teaching as a “white” occupation. On the other hand, blacks choosing not to teach, but choosing other financially lucrative professions may also indicate to young black students that teaching is not an occupation to pursue to get ahead. In either case,

over time, the teaching force has remained consistently white. Just as the socialization patterns of gender need to be changed to remedy the failure of men to seek positions in education, the socialization patterns of race need to be addressed in order to change the way racial inequality manifests itself in the teacher labor market.

Salary

Attending and graduating from college has become increasingly important in the United States, and for some socioeconomic groups, professional or post-graduate training of some type is considered essential for upward mobility. The defining function of the school of education is to prepare teachers; however not all bachelors in education degree recipients become teachers. The salary return of education degree recipients is an important issue for this reason -- not every education degree recipient becomes a teacher and not every teacher has an education degree. Therefore, examining education degree recipients as a group can provide some useful information on the individuals who become teachers and those who do not.

The findings of Chapter Four suggest that bachelor's in education degree recipients who work as teachers are most likely not leaving teaching due to higher pay in non-teaching occupations. Outside of teaching, education degree recipients had, on average, lower salary returns than education degree recipients who were teachers. Therefore, the most economically advantageous option for bachelors in education degree recipients was to work as teachers. However, one of the limitations of Chapter Four's study is that given my data source, I was unable to fully verify if that was, in fact, true. In order to understand the reasons for not choosing teaching, it is necessary to conduct a qualitative research study in which undergraduate

education degree holders who worked as teachers and left teaching and those who never worked as teachers are interviewed to determine their perceptions about teaching and other career options that are open to them.

Also, since the education degree, particularly the master's degree in education, has the greatest return in teaching, recruiting and retaining education degree recipients into teaching should not be difficult; however, the quality of these individuals (to-be teachers) was not examined. Thus, one of the limitations of Chapter Four is that the quality of the education degree recipients who work as teachers was not examined, but future research can address the characteristics of these individuals to determine if the higher-performing bachelor's in education degree recipients were the ones becoming teachers and staying in teaching for the long-term.

Future research should also explore the concept of *job matching* – the process by which workers are matched to positions. Job matching is a concept that is discussed within the human capital framework (see, for example, Barron, Black, and Loewenstein, 1989; Jovanovic, 1979). One of the implications of Chapter Four's finding is that those education degree recipients who worked as teachers may be adequately matched with the position. According to job matching, as the worker's job tenure increases, the likelihood of ending that job decreases. Also, as the worker's job tenure increases, the worker produces higher productivity results also resulting in a lower likelihood of ending the job. In contrast, a job change occurs when information about a possible alternative match becomes known to the worker or if the worker's productivity levels are relatively low, thus increasing the likelihood of ending the job. In this sense, teacher turnover can be explained by the fact that those education degree recipients who did not work as teachers were not "matched" with the most fitting position or may have had relatively lower productivity levels. In order to further investigate teacher job matching, and subsequently,

teacher turnover, data on teacher productivity is needed. Therefore, it would be beneficial to have student-level achievement data for those education degree recipients who worked as teachers for the long-term and those who may have only worked as teachers for three to five years (see, for example, Darling-Hammond, 2004, 2005; Darling-Hammond & Berry, 1999; Ingersoll, 2007; Troen & Boles, 2003) in order to determine if, in fact, tenure in the job increases the productivity, and therefore the likelihood of remaining in the job, resulting in a job match.

5.3: Concluding Remarks

Just as the gender dynamics of the teaching occupation may affect the type of individuals who choose teaching (i.e. girls more than boys), the racial/ethnic dynamics of teaching may also affect the greater likelihood of certain individuals choosing teaching (i.e. whites more than any other racial/ethnic group), and the prospective salaries also affects the individuals who choose to be education degree holders versus non-education degree holders (i.e. high-ability individuals choosing other occupations and professions). As teacher education and training, as well as the management and operations of teaching and schools became increasingly standardized, the homogenization in the social characteristics of the individuals who chose the occupation increased. Thus, there seems to be a relationship, however, it is a relationship that needs further exploration.

APPENDIX

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