Attracting, Developing and Retaining Effective Teachers:

Background report for the United States

Prepared in partnership by:

National Council On Teacher Quality

U.S. Department of Education International Affairs Office

Submitted by the United States Department of Education, October 2004. The document was prepared in response to guidelines the OECD provided to all countries participating in its study on "Attracting, Developing and Retaining Effective Teachers." The guidelines encouraged the preparer(s) to include multiple policy perspectives. Therefore, the opinions expressed and data presented are not necessarily those of the U.S. Department of Education, the National Council on Teacher Quality, the OECD, or its Member Countries.

This report was produced under a U.S. Department of Education grant to the National Council on Teacher Quality. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the

U.S. Department of Education of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred.

U.S. Department of Education
Rod Paige
Secretary

International Affairs Office
Joseph A. Esposito
Deputy Under Secretary for International Affairs

October 2004

This report will be available online. To order copies of this report, please contact the International Affairs Office: (202) 401-0430.

PREFACE

This background report is one of a series of papers prepared by countries participating in an activity of the Organization for Economic Cooperation and Development (OECD), "Attracting, Developing and Retaining Effective Teachers." The focus of the country background reports is on the aspects of teacher policy that deal with how to attract, recruit, develop, and retain effective teachers. The report has the following four objectives: to synthesize relevant research, to identify innovative and successful policy practices, to facilitate exchanges of lessons among countries, and to identify policy options. The U.S. background report is organized into six chapters, corresponding to the common framework set by the OECD Directorate for Education, Employment, Labour and Social Affairs, Division of Education and Training.

The authors have attempted to present a balanced picture of the debate on teacher policy in the United States, and to faithfully capture multiple perspectives on contentious issues. With the aim of providing an accurate presentation of the policy debate, the views described in this document represent differing opinions and do not constitute an official position of the U.S. Department of Education, or of any individual author.

This report reflects the contributions of several individuals and organizations. Kate Walsh, president of the National Council on Teacher Quality (a non-profit, non-governmental organization) prepared the initial drafts of the report, with contributions from Danielle Wilcox, Tyce Palmaffy, Christopher Tracy, and Zeus Yiamouyiannis. Amy Ostermeier, under the guidance of Lenore Yaffee Garcia, in the International Affairs Office at the U.S. Department of Education, undertook additional writing, revision, and final editing. Special credit is due to Kerry Gruber, Catherine Freeman and Val Plisko at the National Center for Education Statistics (NCES) for their provision of data and exceptionally thorough review of the report. Data used by the authors from sources other than the Department of Education is so noted. Susan Sclafani, Rene Islas, Michael Petrilli, and Carolyn Snowbarger, also of the Department of Education, all provided valuable comments in the preparation of the report.

CONTENTS

EXECUTIVE SUMMARY

While education in the United States is a state responsibility and a local function, it is also a top national priority. Laws adopted over the years have established an important role for the federal government in education. Responding to national concern about education quality and equity, the *No Child Left Behind Act*: a reauthorization of the *Elementary and Secondary Education Act*, was enacted in 2002 to hold schools and school systems more accountable for results.

Debate on education policy in the United States is fueled in part by recognition of the need to improve the overall performance of U.S. students, as suggested by many national and international tests, and concern over the persistently low achievement of many students from ethnic and racial minorities and low-income backgrounds. Four systemic issues in U.S. education, identified in an influential 1983 report *A Nation at Risk*, are still among the focuses of reform efforts: a need for increased focus on academic content; lack of rigor in expectations; and the need to improve training, remuneration, and recruitment of teachers. Each of these issues is addressed within the broader context of the debate on the proper role of federal, state, and local governments in education.

The *No Child Left Behind* legislation requires states to adopt standards that address the achievement of all children, measured by annual testing in each of grades 3 through 8 and at least once in grades 10 through 12 in the core subject areas of reading, language arts and mathematics, with science to be included by 2007-08. The law also requires that each state disaggregate achievement data by student subgroups according to race, ethnicity, gender, English language proficiency, migrant status and low-income status. There is a strong emphasis on setting high standards for student achievement and promoting accountability by establishing consequences for poor performance. In addition, by 2005-06, *No Child Left Behind* requires all teachers be "highly qualified," which includes demonstrating competency in the academic content in the areas in which they teach.

National Trends

Primary and secondary education in the United States is provided by both public and private schools. In the 2001-02 school year, there were a total of 91,380 public primary and secondary schools reporting students in membership in the United States, and approximately 29,000 private schools. Of the public schools, the majority (84,919) were "regular" schools; 6,133 were schools using a "special" curriculum (focused primarily on special education for persons with disabilities or alternative education programs); a small minority (328) were classified as vocational schools.

Private schools enrolled 5.3 million students in 2001-02, and have maintained a relatively constant enrollment of roughly 10 percent of the U.S. student population for the past 50 years. Over 79 percent of private schools have a religious affiliation, and approximately 23 percent are nonsectarian. A small but growing minority of students in the United States, about 1.7 percent, are educated at home.

In 2001-02, there were approximately three million teachers working in public schools in the United States, approximately 75 percent of whom are female, and 84 percent of whom are white. These teachers serve a student body of approximately 47 million students that is growing increasingly diverse. From 1986 to 2001, the percentage of white students in public U.S. elementary and secondary school classrooms declined from 70.4 to 60.3 percent, while the percentage of African-American students increased from 16.1 to 17.2, and Hispanic students increased from 9.9 to 17.1 percent.

Public schools are administered at the local level under state regulation, with limited federal oversight. Each of the 50 states has distinct standards for public education and implements policy through its state department of education. Local public schools are managed by school districts and, generally, an elected school board. There are approximately 15,000 school districts in the United States, the majority of which operate as part of a municipal or county administration. Private schools may operate independently or as part of an association of similar schools; there is largely no oversight of private schools by government at any level.

In the 2003-04 school year, states contributed 46 percent of total funding on education, while local communities funded 37 percent and the federal government 8.2 percent. The remainder is made up by private contributions.

The vast majority of public schools draw their student body from a geographically defined area. Typically, students and parents do not choose a particular school (except by choosing where to live); students are required to attend specific schools in their area, as determined by the school district. There is, however, a growing emphasis on providing more choice in public education, as reflected by the choice options available to parents under NCLB, and the growth of public charter and magnet schools throughout the United States.

Attracting Highly Qualified People to the Profession

The longstanding debate on teacher quality in the United States is framed by the culture of accountability required by the implementation of *No Child Left Behind*. Policy-makers are focused on results, and have defined three characteristics of "highly qualified" teachers. A highly qualified teacher must have a bachelor's degree, full state certification or licensure, and demonstrate competency in the subject matter they teach. There is a debate in the United States on the efficacy of traditional teacher training programs and certification, whether and how these can be strengthened, and the development of "alternative certification" processes. The adequacy of teacher salaries and the difficulty of staffing in certain subjects and geographic locations are also topics of lively debate.

Policy-makers have expressed great concern over the generally low standards for admission to and lack of rigorous courses in many teacher-training programs. Additionally, there is longstanding difficulty in finding qualified teachers for certain subjects, such as foreign languages and the sciences. Although there is broad agreement that the academic standards for teachers need to be raised, the debate on how to reform teacher certification and recruitment is roughly split into two camps: 1) those who wish to lower barriers to teaching for talented individuals, and 2) those who wish to strengthen regulation of teacher certification and related activities.

Among the most contentious issues in attracting and retaining teachers is the level of teacher salaries. In the United States, a typical public school teacher teaches class for fewer than 40 hours per week, but spends significant time out of class preparing lessons. Additionally, teachers generally do not work during the summer months (June-August). Because of these differences in work schedule as compared with other professions, comparisons in pay are difficult. A comparison of average annual salary shows teachers earning significantly less than other professions with similar entry requirements, but calculated on an hourly basis, teacher pay has been shown by some calculations to be among the highest of comparable professional positions.

There also is a geographic and environmental dimension to attracting teachers to some of the most high-need areas. Urban schools with high populations of low-income students have a harder time recruiting and retaining teachers than schools in suburban, and generally wealthier, areas.

Some have argued that the single salary schedules make it difficult to fill positions in high-need schools and subject areas.

Educating, Developing, and Certifying Teachers

While there is no single path to becoming a teacher in the United States, the bulk of the nation's teachers attend preparatory programs in large universities. These programs typically last four years, result in a bachelor's degree, and aim to prepare candidates for teacher certification. Some teaching programs provide a combined bachelor's degree with a master's degree in education by adding a fifth year to the undergraduate course of study, while graduate programs for teaching typically last up to two years. Virtually all programs require field experience.

Teacher certification is a responsibility of each of the 50 states, and requirements vary from state to state. To be certified to teach at the secondary school level, the majority of states require candidates to major or minor in their subject area, or to pass a subject matter exam. To be certified to teach at the elementary school level, states typically require a major in education with general coursework in both the humanities and the sciences.

There is widespread debate on the effectiveness of traditional training programs, given the lack of uniformly rigorous subject-area preparation among the nation's teachers. Many teachers are currently teaching "out-of-field," meaning in areas for which they were not trained. The *No Child Left Behind Act* aims to boost academic preparation among teachers by requiring that all teachers in core subject areas be able to demonstrate subject matter competence by the end of the 2005-06 school year.

Retaining Effective Teachers

Research in the United States has shown that three categories of teachers are most likely to leave the profession:

- *The most academically qualified teachers*: Some research suggests that teachers who perform well on college entrance exams and attend highly selective undergraduate institutions are more likely to leave the profession early in their careers than others and significantly less likely to return to teaching later in their careers.

- *Teachers in hard-to-staff areas*: Teachers who work in schools with high concentrations of disadvantaged children, those children who may be in most need of the opportunities that schooling provides, exhibit higher rates of turnover. For example, at the highest-poverty elementary schools in the city of Philadelphia, less than half of the original 1999-2000 staff was still teaching in these schools three years later.

- *Young and inexperienced teachers*: Young teachers (under age 30) and inexperienced teachers (those with fewer than five years of experience) leave the profession at elevated rates. However, it is not clear that attrition rates for these teachers are any higher than for similar individuals in other professions.

In an effort to retain high-performing teachers, many districts have developed targeted retention strategies. Some districts have instituted "differential" pay structures that give teachers higher pay for agreeing to teach in high-poverty schools or for teaching in hard-to-staff subject areas. Others have developed "pay for performance" structures that provide higher pay to teachers whose students show high achievement gains. Still other retention programs aim at developing opportunities for teachers with superior skills to earn advanced certification. Finally, mentoring programs in some districts are aimed at reducing the frustration and anxiety experienced by new teachers, and hence increasing retention.

Chapter One
THE NATIONAL CONTEXT: TRENDS IN U.S. EDUCATION

1.1 Introduction

1.1.1 Since the nation's founding, residents of the United States have looked to education as the engine of self-improvement, social equality, and economic vitality. Today the emergence of a highly competitive global economy and the decline of a once-strong manufacturing sector have forced the United States to reevaluate its education system and goals. Americans are engaged in a prodigious and sometimes contentious debate over the unimpressive academic achievement of its students in such key subjects as mathematics and science, relative to the performance of children in many other nations. Even more unsettling has been the nation's struggle to achieve greater social equality for its disadvantaged children. These challenges have generated a massive effort to retool schooling in the United States.

1.1.2 The U.S. educational structure is inordinately complex given the system under which it operates. In contrast to most education systems in Europe and Asia, it is highly decentralized. From a time well before the nation would claim its 50 states, 5 territories and the District of Columbia, early settlers pushed westward, unlimited by and unaccountable to any governing authority. The U.S. Constitution, not written until nearly two hundred years after Europeans first settled along the shores of what is now the United States, reflects a deep respect for the autonomy of local communities. It places distinct limits on the powers of the federal government; as such, education of the nation's citizenry has always been reserved to the states. Out of their own deference to the strongly held principle of local control, states have also ceded much of their constitutional authority on matters of public education to local government.

1.1.3 Private schools, which have existed in the United States from the beginning of formal public education, remain largely untouched by government regulation at any level. Direct state and federal funding is rarely provided for private schools, and generally this is only in circumstances in which private schools provide necessary services, such as special education, that local public schools cannot provide. The legacy of the United States' decentralized approach is found in the approximately 27,000 private schools and 15,000 public school districts whose organizational structure reflects their largely independent development.

1.1.4 While the U.S. government recognizes state autonomy, it also explicitly permits Congress the power "to provide for the general welfare of the United States." In instances where states are failing to ensure the general welfare of their citizenry, it is wholly appropriate for the federal government to provide direct aid to states for the purpose of supporting public elementary and secondary schools. Up until the last 50 years, these efforts were generally modest. Through the first part of the 20th century, Congress approved several pieces of legislation to aid primary education, but they were limited in scope and in funding. In 1957, the Soviet Union successfully launched the Sputnik rocket into outer space. From the perspective of policy-makers, this event can be construed as the first international critique of U.S. educational performance. It provoked a sudden shift in U.S. thinking about the success of its education system, prompting a reexamination of the

proper role of the federal government and federal legislation to improve achievement in mathematics, science and foreign languages.

1.1.5 Concurrently, the emerging civil rights movement gave light to the education inequalities of the nation's disadvantaged children, leading to the passage of the 1965 Elementary and Secondary Education Act. This law represents the first major federal commitment of direct aid to the nation's elementary and secondary schools. It has been reauthorized regularly with the most recent reauthorization being the landmark legislation, the *No Child Left Behind Act of 2001* (NCLB). Since the original legislation, federal programs have multiplied and the demand for them has grown, blurring the once distinct line between federal, state, and local roles in public education. Historically, the federal role has been limited to assisting the disadvantaged: poor, minority, and special needs.

1.1.6 An important distinction between the United States and many other nations is the absence of a national curriculum. In United States' public schools there is no common core curriculum that aims to achieve "universal readiness" (Hirsch, 1996). School districts are given wide latitude in choosing which courses they will offer and which curricula they will use.

1.1.7 Thus, each of the three major levels of government in the United States (local, state, and federal) plays a unique role in public education. State and local governments largely control curriculum, teacher certification and spending at the local level. Local governments are charged with adapting state plans to the needs of local students and teachers, including the development of special assistance programs and professional development. The U.S. Department of Education provides major assistance, funding, and research and has established a plan for national monitoring of standards and achievement.

1.2 The Federal Role in Education Reform

1.2.1 While removed from curriculum design and individual school management, the federal role in public education has evolved to reflect changing national priorities. Current legislation builds upon two decades of reform aimed at addressing those problems identified in the 1983 report, A *Nation at Risk*. The report concluded that declines in public school education performance could primarily be attributed to four systemic problems: a need for increased focus on academic content; lack of rigor in expectations; insufficient time spent in school, homework, and study; and the need to improve training, remuneration, and recruitment of teachers. *A Nation at Risk* launched a movement to raise academic standards across the nation. The process began among individual state governments, which developed new curricula, testing, and accountability programs. Nongovernmental groups such as the National Council of Teachers of Mathematics joined the effort by developing national academic standards in the late 1980s and early '90s for different subject areas.

1.2.2 Education continues to be one of the nation's chief policy concerns. In 2002, the U.S. Congress adopted reform legislation, titled the *No Child Left Behind Act* (2001). The act, commonly referred to as "NCLB," intends to alleviate the nation's most troubling education problem: the achievement gap. Despite numerous efforts to achieve desegregation in education and the improvement of civil rights in the country as a whole, the achievement gaps between rich and poor and between white and minority students, remain wide.

1.2.3 NCLB is based on the principle that every student can learn and requires schools to measure and report the progress of all students based on academic standards developed by each state. *No Child Left Behind* requires that if schools do not meet state academic standards for two consecutive years, parents are allowed to transfer their children to other, better-performing schools. Financial support is available for state programs that adopt research-based instructional techniques. An example is a $1 billion incentive program, through which NCLB persuades states to adopt research-based instructional techniques in early reading. Sections 2.3.4 to 2.3.6 and 4.5 provide further detail on NCLB requirements.

1.2.4 NCLB is also the first piece of federal legislation to mandate that public school teachers must meet certain requirements to be allowed to teach. By the 2005-06 school year, all public school teachers in core academic subjects must be "highly qualified." A teacher must have obtained a bachelor's (or undergraduate academic) degree, be fully licensed by the state (the criteria for which are decided by the individual state) and also demonstrate subject matter competence. The requirement for the demonstration of subject matter competence is indicative of a public skepticism over the rigor of the subject matter training that many teachers receive during formal teacher preparation.

1.3 Demographic Trends

1.3.1 While Europe's population has begun to decline and is projected to continue to decline, the population of the United States is increasing (United Nations Population Fund, 2001) and becoming more diverse. Likewise, the racial and ethnic diversity of school populations in the United States is increasing. From 1986 to 2000, the percentage of white students in U.S. elementary and secondary school classrooms declined from 70.4 percent to 61.2 (U.S. Department of Education, 2003b, Table 42). During the same time period, the percentage of African-American students increased from 16.1 to 17.2, and, most significantly, the Hispanic population rose from 9.9 percent in 1986, to 16.3 percent in the fall of 2000. The percentages of Asian or Pacific Islander and American Indian also increased from 1986 to 2000 (U.S. Department of Education, 2003b, Table 42).

1.3.2 Results from national achievement tests have shown that African-American students and those of Hispanic origin perform on average at consistently lower levels than their white counterparts. (U.S. Department of Education, 2003b, Tables 111,114,124,125 and 129). In 1999, ten percent of 17-year-old white students were performing at the highest level of mathematics, compared to 1 percent of African-Americans, and 3 percent of Hispanics. (U.S. Department of Education, 2003b, Table 125). White students outperformed African-Americans and Hispanics in history and geography (U.S. Department of Education, 2003b, Table 121), and were more likely to perform at the highest reading levels (U.S. Department of Education, 2003b, Table 114). As the numbers of racial and ethnic minority students rise, the importance of closing the achievement gap becomes ever more critical.

1.3.3 The federal government acknowledges the significance of racial and ethnic identity in the United States and asks residents to identify their background (by race and ethnicity) in the decennial census. This self-identification is considered useful to all social policy-makers, and particularly in the field of education. Using available data sorted by the race and ethnicity of students, policy-makers can more effectively monitor the progress of historically disadvantaged groups.

1.3.4 In the 2000 census, respondents were asked to classify themselves in a particular racial group and also to identify if they were of Hispanic origin. The question about race asked individuals to report the race or races of which they considered themselves to be a part. There were 14 categories of race, including White; Black, African-American or Negro; and American Indian. Despite this diversity, it is common to report statistics by membership in a "majority" or "minority" racial or ethnic group. Typically, individuals who do *not* consider themselves in the category of "White and non-Hispanic" are identified as being a part of a racial and ethnic minority group. Individuals of Hispanic origin are considered to be part of an ethnic minority regardless of race.

1.4 Economic Conditions Affecting Teachers and Schools

1.4.1 In general, the demand for schooling is increasing in the United States. In recent years, enrollment in public school has increased and there are growing numbers of students pursuing advanced degrees. While there is no evidence to suggest that a generalized teacher shortage is imminent, the implementation of No Child Left Behind mandates that school systems attract and retain teachers who are certified and have mastery in the subject area they teach. As a result of this increased federal pressure and the fact that more teachers are now approaching retirement age than in the recent past (U.S. Department of Labor, 2003), states are examining their processes for recruiting qualified professionals.

1.4.2 The average yearly salary for U.S. public school teachers in 2001-2002 was $44,604 (U.S. Department of Education, 2003b, Table 77). This was more than estimated averages during 2001-2002 for all workers ($40,938) and government workers ($43,034), but far behind average salaries for accountants ($54,503), computer systems analysts ($74,534), and engineers ($76,298). Teachers in private schools earn less, on average, than those in public schools (U.S. Department of Education, 2003b, Table 76).

1.4.3 Even within the current slow-growth economy, there is evidence to suggest that education is becoming an increasingly valuable good to the American public. Individuals who have completed more levels of education are more likely to earn more and to stay employed (Hanushek, 2002). Further, the United States, like other industrialized nations, is moving in the direction of a knowledge-based economy, a shift that demands a more highly educated labor pool (Hanushek, 2002). The Bureau of Labor Statistics projects that the category of professional and related occupations is expected to be one the fastest growing sectors in the United States job market, gaining an additional 7.0 million jobs by 2010 (U.S. Department of Labor, 2001). Statistics show that higher percentages of Americans are seeking to complete high school education and attain advanced degrees. In 2000, 84.1 percent of the population had a high school diploma or higher, compared with 75.2 percent in 1990. (U.S. Department of Education, 2003b, Table 11).

1.4.4 Due to population shifts, there are also larger numbers of students enrolling in elementary and secondary public schools, suggesting that the student population in the United States at all levels will continue to increase. From 1990 to 2002, public school enrollment in kindergarten through eighth grade increased from 29.9 million to a projected 33.8 million in fall 2002 (U.S. Department of Education, 2003b, Table 2). Private school enrollment, in contrast, has changed little over the past 10 years (U.S. Department of Education, 2003b, Table 2). As students age, this growth in lower and primary public education will result in increased enrollment in secondary schools.

1.5 Funding U.S. Schools

1.5.1 In 2003-2004, the United States spent over $501.3 billion on public primary and secondary education. It estimated that over $350.8 billion will be spent on higher education in the same year. Overall, total public spending on education has increase substantially in recent years at all levels of government, even when accounting for enrollment increases and inflation. National K-12 education spending has increased 101 percent since 1990-91, 48 percent since 1996-97, and 22 percent since the 1999-2000 school year. When this is calculated on a per-pupil basis and is adjusted for inflation, funding has increased 21 percent over the last 10 years (U.S. Department of Education, 2004a).

1.5.2 State and local governments are the primary sources of public primary and secondary education. In the 2003-04 school year, state and local governments provided 83 percent of the funding for public primary and secondary education in the United States. Forty-six percent were from state funds and 37 percent were from local governments. The federal government's share in 2003-4 was 8.2 percent, representing a rise by more than one-third since 1990-91, when the federal government contributed only 5.7 percent. In 2003-04, the remaining 8.8 percent of education funding was from private sources (U.S. Department of Education, 2004a). More detail on funding can be found in sections 2.2.10-2.2.12.

1.5.3 In 2001-02, private schools educated about 10 percent of the nation's students and made up about 23 percent of all schools (U.S. Department of Education, 2004b). While the majority of private schools receive funding primarily from non-public sources such as tuition payments and private donations, in the case of private schools that provide services that the local school district can't supply, such as those for special education, federal funding may pay for all of a student's tuition.

1.6 Public Perceptions: The role of schools, the quality of schooling, and the status of teachers

1.6.1 Overall, people in the United States rank public education among their top three national concerns, along with national security and the economy (Public Agenda Online, Education, Issue Guides, 2004). According to the results of the most recent Gallup opinion poll of public attitudes toward public schools, 87 percent of Americans say that improving the nation's public education system should be a high priority for Congress (Rose, et al., 2003). Sixty-seven percent of Americans rate the nation's schools as "C" (mediocre) or below (Rose, et al., 2003).

1.6.2 Respondents typically view their local public schools as slightly above average (Rose, et al., 2003). Yet, overall confidence in public schools has declined since the 1970s. (Public Agenda Online, Education, Issue Guides, 2004).

1.6.3 In 2003, 25 percent of respondents to a national poll regarded funding as the biggest challenge to schools in their community (Rose, et al., 2003). School discipline and overcrowding (more students than the school has capacity for) were rated as the biggest challenges by 16 and 14 percent of respondents, respectively (Rose, et al., 2003).

1.6.4 Sixty-six percent of those polled believe that schools are having difficulty retaining teachers while 61 percent indicate that schools are having trouble attracting teachers (Rose, et.al, 2003). Fifty-nine percent of the public responded that they believe teacher salaries are too low, and 65 percent believe that higher salaries should be paid as an incentive for teaching in schools determined to be in need of improvement (Rose, et al., 2003).

1.7 Conclusion

1.7.1 As is the case with every important function of government, there are widely varying ideas on how to implement, structure and fund education most effectively. The complexity of the situation is magnified by the increasing diversity of U.S. classrooms and the need to boost performance of minority and low-income students, the immediate need for recruiting high-quality teachers, and state efforts to comply with the provisions of *No Child Left Behind*. Legislators and policy-makers routinely acknowledge the challenges facing states and local governments and are seeking ways to improve the performance of U.S. students and schools in a context that is as dynamic as it is complex.

Chapter Two
THE SCHOOL SYSTEM AND TEACHING WORKFORCE

2.1 Introduction

2.1.1 The United States continues to experience growth in student enrollment at the primary and secondary levels (Hussar, 2002). This growth is accompanied by demographic changes in the school population, as more children of racial and ethnic minority groups and recent immigrants enter the school-age population and enroll in public schools. In the past 10 years, increasing enrollment in public primary and secondary schools has been accompanied by steady growth in the number of teachers and school administrative staff. Faced with the challenges of growing diversity and calls for higher standards, new educational programs and approaches have been developed throughout the country. This chapter describes the structure and division of responsibilities in U.S. education, the types and numbers of schools, and general trends in teacher employment.

2.2 Major Structural Features

2.2.1 Schooling in the United States has been shaped by the decentralization of authority based in historical precedent. The early expansion of the United States found many early settlers living in communities far removed from a central governing authority, and this situation required the local administration of education services. Both private and public schools operated without interference or regulation from a central government. The current decentralized structure of the U.S. education system reflects the legacy of this experience. Today, public schools are administered at the local level under limited federal regulation and oversight, and there is largely no oversight of private schools by the government at any level. In both public and private schools, decisions on funding, teacher certification, and curriculum standards are made at the state and local levels.

State Level

2.2.2 Each of the 50 states has distinct academic standards for public education. Generally, these are implemented through two entities: the state board of education and the state department of education. The state board of education is, in general, an elected body that interprets legislation and creates state policy, which is then implemented by the state department of education. The state board of education operates under the aegis of each state's governor (the highest ranking elected official at the state level).

2.2.3 The chief state school officer (also known as the commissioner of education or the state superintendent of schools) manages the state department of education in accordance with the standards and policies set by the board of education. While most state superintendents are appointed by their governors or by their state school boards, some are elected. Among other things, these authorities (the state superintendent of schools, the state school board, and the state department of education) set general parameters for schooling in the state, such as the school calendar, requirements for graduation, teacher certification and training requirements.

School Districts

2.2.4 School districts are government entities that manage the operation of schools in a given location. Historically, each school was operated and run by a local school board. In the 1940s, school districts were recognized for the purpose of supporting the operation of schools as groups rather than individually. The number of school districts in the United

States has declined significantly since this period of consolidation began. In 2002, there were approximately 15,029 school districts in the United States (U.S. Census Bureau, 2002), a significant decrease from the 117,000 of 1939 to 1940, or even the 41,000 operating in 1959 to 1960. In 1980, there were 16,000 school districts (Crewin, 1988).

2.2.5 In 2002, a minority of school districts (1,507) operated as a part of another government, such as municipal or county administrations. The majority (13,522), however, are independent school districts that are managed apart from a state, municipal, county or town government and qualify as a separate governing body (U.S. Census Bureau, 2002).

2.2.6 Most school districts have a local superintendent or chief executive officer and local school board. Together, the local superintendent and the school board manage the operation of schools with the oversight of the highest ranking elected official. Ninety-three percent of school boards are elected and members usually serve a term of four years. Two-thirds of those who serve on school boards are not compensated and less than 4 percent report earning $10,000 or more (Hess, 2002).

2.2.7 The job of the school superintendent, especially in large urban districts, has become increasingly difficult and the turnover rate has increased accordingly; the average tenure of an urban superintendent in 2001 was two-and-a-half years (Council of Great City Schools, 2001). Nine in 10 surveyed said they lacked the authority to fix bad schools and boost student achievement, while six in 10 superintendents saw interference from the local board of education as hampering their ability to do their job (Fuller, 2003).

2.2.8 There is a growing interest in nontraditional governance arrangements of public schools, especially in large urban systems. While almost all public school systems continue to be overseen by an elected school board, an increasing number of districts are opting for appointed school boards (such as Philadelphia) or for mayoral control of the schools (such as New York City). Whether these governance changes result in improved student achievement remains an open question.

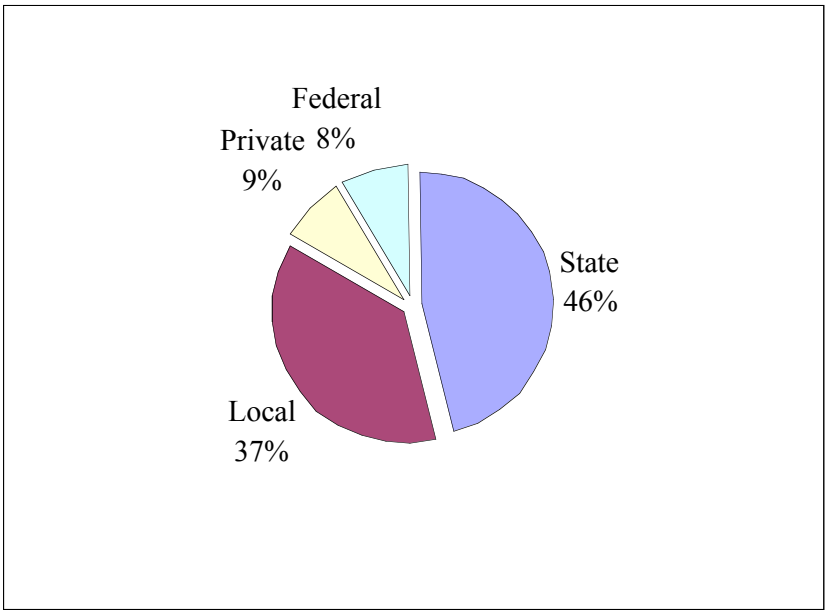
U.S. Department of Education

2.2.9 The U.S. Department of Education, under the direction of the secretary of education, who is a member of the president's Cabinet, is charged with administering federal education laws, providing guidance to states on how to interpret and implement laws passed by Congress, ensuring equal access to educational opportunities, and compiling national data on trends in education. The Department may withhold a state's federal education funding for lack of compliance with federal laws, but this is rare. More often, the Department mediates the dispute and develops a mutually agreeable solution.

Funding

2.2.10 State and local governments provide the bulk of the funding for public primary and secondary education (see Figure 1). Among the states, there is a wide variation in the percentage share of total revenues provided. In 1998-99, for example, the state of Vermont contributed 70 percent of the total revenues for its public elementary and secondary schools, while neighboring New Hampshire supplied only 9 percent (F. Johnson, 2000).

Figure 1: Funding for Elementary and Secondary Education, 2003-04



Source: U.S. Department of Education (2004c) National Center for Education Statistics, "Common Core of Data" and "Financial Statistics of Institutions of Higher Education," surveys and unpublished data, January 2004.

2.2.11 Overall, state funding as a proportion of total funding for education has gradually increased since 1970, when local governments provided over 50 percent of school funding and the state contribution reached approximately only 40 percent (U.S. Department of Education, 2003b, Figure 11). In the past ten years, the federal government contribution to education has increased over one-third from 5.7 percent in 1990-91 to over 8 percent in 2003-04 (U.S Department of Education, 2004a). Today, most states allocate more revenue to education than to any other category of spending, and determine their funding allocation to each school district on the basis of how many students the district enrolls.

2.2.12 Though total per-pupil spending has increased nationally, per-pupil expenditures vary widely among the 50 states and among districts within each state. States' per-pupil expenditures range from $4,378 in Utah to $10,337 in New Jersey (U.S. Department of Education, 2003b, Table 169). There are also significant differences in public school teacher salaries nationally, from a low average annual salary of $31,295 in South Dakota to a high of $54,575 in New Jersey (U.S. Department of Education, 2003b, Table 78). Wealthier school districts offer striking examples of the disparities in pay. For instance, the Scarsdale school district in the state of New York pays a median salary of $90,191 (New York State Department of Education, 2002).

Private Schools and Home Schooling

2.2.13 State and federal oversight of private schools is minimal. While many private schools are part of a larger bureaucracy, such as Catholic diocesan school systems, there is no single governing body responsible for regulating this sector of education. Each private school is responsible for attracting students and recruiting and retaining teachers. Many private

schools also establish governing boards that determine policy and are responsible for hiring a headmaster, or head of school. Only a few states mandate that private schools be accredited, and most states do not require certification for private school teachers. Private schools are typically reviewed and accredited by their member associations or by regional accrediting bodies.

2.2.14 Parents who do not wish to send their children to public or private school may elect to educate them at home. In 1999, the number of students educated at home was approximately 850,000, or 1.7 percent[1] of students ages 5-17 nationwide (U.S. Department of Education, 2001b). In general, parents wishing to teach their children at home only have to file basic information with the state. Over half of the states, however, require some kind of evaluation of children who are home schooled. Usually, this evaluation involves testing of students, but some states accept portfolio evaluations or a teacher evaluation. Much less frequently, states have education or testing requirements for parents (ERIC Digest, 2001). While these oversight provisions exist to ensure that children have access to a good quality education at home, there may be little effort in the enforcement of standards (Lines, 2000).

2.3 Public School Division of Educational Responsibilities

Curriculum Development

2.3.1 Selection of school curricula in the United States is largely the responsibility of the local school district. Historically, states' role in this area has been limited to mandating certain courses and setting graduation standards. In the late 1980s, states began developing academic standards that outline what students ought to learn at each grade level. The actual standards vary dramatically from state to state, and local districts enjoy wide latitude in determining how to meet their state's standards.

2.3.2 Some who criticize a district's autonomy to specify curriculum claim that curricular variety often leads to wide disparities in curricular quality and many point to a solution in the development of a national curriculum (Hirsch, 1996). However, efforts to develop national curricular standards have faltered in the face of resistance rooted in the nation's tradition of local control.

School Accountability

2.3.3 The new academic standards of the *No Child Left Behind Act* (NCLB) are at the core of an accountability movement that began in the states during the late 1980s. The Improving America's Schools Act of 1994 specified that state assessments should measure the proficiency of students in mathematics and reading or language arts and that students should be tested three times between grade three and grade twelve (U.S. Department of Education, 2004g). The current law expands testing requirements by requiring states to administer tests in reading and math annually in grades 3 through 8 and once in high school.

2.3.4 To emphasize the ultimate goal of high student achievement, NCLB requires states to set a "proficiency" level on the state standardized achievement tests and have all students reach that level by the year 2014. In the interim, schools must demonstrate sufficient

[1] The estimate includes students who were home schooled while also enrolled in school for 25 hours or less per week, and excludes students who were home schooled due to a temporary illness.

improvement each year (called "adequate yearly progress") in their students' performance or be subject to a variety of possible sanctions, from students being given the right to transfer to other public schools, to significant restructuring of the school.

2.3.5 Furthermore, not only must the entire school make improvement toward proficiency, but so too must each demographic subgroup (for instance, African-American students, Hispanic students, students with disabilities, economically disadvantaged students, etc.) within that school. Schools must improve the performance of *all* their students in order to avoid sanctions. The goal is to improve overall performance and to close the achievement gaps between racial and economic subgroups.

2.3.6 Through the *No Child Left Behind Act*, the federal government also acquires more oversight of the hiring of teachers in public schools; please see section 4.5 for a more thorough description of the changes in employment requirements. The training, hiring, assignment, and evaluation of teachers remain state and local responsibilities, but the national legislation sets a framework within which districts must operate as well as an ultimate goal towards which they must progress.

2.4 Types and Numbers of Schools

2.4.1 In 2001-02 there were a total of 91,380 public elementary and secondary schools serving approximately 47 million students in the United States[2]. Of these, 84,919 were "regular" schools using the traditional curriculum, 6,133 were schools using a "special" curriculum (focused primarily on special education or alternative education programs), and 328 were classified as vocational schools. (Hoffman, 2002). Ninety-eight percent of all public school students were enrolled in regular schools, 1 percent in alternative schools, and 0.4 percent in special education and vocational schools, respectively (Hoffman, 2002). Compulsory education requirements vary among the states. However, all require that compulsory schooling begin between the ages of five and seven, and end between the ages of 16 and 18 (Education Commission of the States, 2000).

Special Education

2.4.2 In the past, students with severe disabilities were usually educated in separate schools. Students with more moderate disabilities who attended a regular school were placed in a "self-contained" separate classroom. In 1975, Congress passed legislation that gave all students with disabilities the right to a "free appropriate public education" in the "least restrictive environment." This "environment" was interpreted by U.S. courts to mean education within the mainstream classroom in the regular school. This change has required the retraining of many teachers and continues to be a focus of debate. There are now almost six million children between the ages of six and 21 years who have diagnosed learning, mental, or physical disabilities (Hoffman, 2002).

Vocational Education

2.4.3 Approaches to vocational education, in which students are prepared for a trade, have also changed significantly in the last two decades. Traditionally, vocational education was treated as a parallel track to academic education for college, preparing students for entry-level jobs in occupations requiring less than a bachelor's degree. Between 1966 and

[2] 94,112 schools were reported in total; 2,732 schools did not report having students. [Students in specialized schools were often enrolled in a regular school as well and were reported as part of the membership of either the regular or the special school, but not both.]

1996, there was a marked shift toward the teaching of academic subjects at the expense of vocational subjects, reflecting a society-wide recognition that all students should have the opportunity for postsecondary education. The number of vocational schools is quite small; many students who wish to pursue this type of preparation do so by taking vocational courses offered at a traditional public high school. For instance, between the years of 1966 and 1996, the share of public secondary school teachers teaching industrial arts dropped from 5 percent to 0.5 percent, while the share teaching English grew from 18 percent to 24 percent and the share teaching mathematics grew from 14 percent to 17 percent (U.S. Department of Education, 2003b, Table 71).

2.4.4 In 1984, the U.S. Congress passed legislation that sought better coordination between high schools and community colleges, which together could offer a more comprehensive preparation in a trade. Underlying these efforts was a belief that as technology advanced, the labor market would demand more skilled and better-educated workers. Yet, from 1982 to 1994 there was a steady decline in the percentage of high school graduates concentrating in vocational programs (34 to 25 percent) (U.S. Department of Education, 2000a).

Magnet Schools

2.4.5 In the past few decades, the United States has experienced a marked proliferation of public school types, sparked initially by the efforts to desegregate schools, followed by the push to provide families with their choice of schools and introduce competition for students as a means to improve school quality. In 1976, Congress authorized grants to support the planning and implementation of "magnet programs" in public schools as a new approach to make schools more racially diverse. Magnet programs are programs within a school that offer curriculum based on a specific theme, subject emphasis or type of instruction and that can enroll students from anywhere in the district. For example, there are magnet schools in some districts that focus on bolstering student achievement in science and technology. Magnet schools are required to teach all subjects, however, and must conform to the same accountability provisions as traditional public schools under *No Child Left Behind*. Because these schools are not required to service youth in their geographic vicinity, they are less likely to reflect the racial composition of a particular neighborhood.

2.4.6 The number of magnet schools more than doubled in the 1980s with another large infusion of funding ($739 million) provided by Congress in 1985 (Steel and Levine, 1994). By the 1991-92 school year, there were 2,400 magnet schools and 3,200 individual magnet programs in the United States. Over half (54 percent) of the districts offering magnet school programs are located in large urban school districts. Of the estimated 1.2 million students enrolled in magnet programs during the 1991-92 school year, 64 percent had transferred outside their neighborhoods to attend the magnet (Steel and Levine, 1994).

2.4.7 Some magnet schools have a competitive enrollment process, in which students have to demonstrate a particular talent or attribute. Other magnet schools, particularly those established in the 1990s, are premised on a lottery system with some adjustments to ensure racial diversity. Critics of the magnet school concept assert that such schools "cream" the best students from the neighborhood public school, diluting its quality. In response, some states have enacted legislation that prohibits admission requirements for magnet schools to be based on past academic performance or behavior.

Charter Schools

2.4.8 Charter schools are schools of choice for both parents and teachers. These schools are publicly funded, but allow teachers to operate with freedom from many of the regulations that apply to traditional public schools. Charter schools are not bound by state curriculum or administrative guidelines, and thus give parents the ability to choose a school with an alternative curriculum and structure that may be a better fit for their child. Though charter schools have more flexibility than other schools, they are not exempt from accountability standards under *No Child Left Behind*.

2.4.9 The name "Charter School" comes from the charter, or contract agreement between the school and the sponsoring agency, usually a state or local school board. The charter establishes each school's mission, program, goals, students served, methods of assessment and ways to measure success. Most charters are granted for three to five years. Specific definitions of charter schools vary by state. In 2003, 40 states had charter laws established, and there were a total of 2,695 schools in operation with approximately 685,000 students enrolled. For more information, visit the following website: http://www.uscharterschools.org/pub/uscs_docs/index.htm.

2.4.10 The growing number of charter schools in the United States has gained increasing attention from education policy-makers. To gain a charter to operate, these schools must outline their mission, goals, and implementation plans in order to receive approval for operation. The school district, in turn, regularly reviews the school's progress in achieving its goals. If a school is not meeting its benchmarks, the school district will withdraw permission for the school to operate.

Private Schools

2.4.11 During 2001-2002, private schools enrolled 5.3 million students and made up about 23 percent of U.S. primary and secondary schools. According to a 2001-2002 survey of private schools, 47 percent of all private school students attended Catholic schools, with another 1.93 million attending "other religious" schools (usually Christian denominational), and 0.91 million attending nonsectarian private schools (U.S. Department of Education, 2004d). Over the last 50 years, the share of all students attending private schools has remained fairly constant at around 10 percent (NCES, 2002a; U.S. Department of Education, 2004d.) Enrollments in Catholic schools have stabilized after decades of decline, while enrollments in other private religious schools, have grown steadily.

2.4.12 In 2001-2002, 77 percent of the nation's private schools had a religious affiliation; 28 percent were affiliated with the Roman Catholic Church, and 49 percent with other religious groups. The remaining 23 percent were nonreligious (U.S. Department of Education, 2004d). Although some private schools may belong to one or more associations, they do not operate in a district system parallel to public schools. Private schools are autonomous, but they may be a part of organizations or associations that reflect a particular religious affiliation or emphasize a special program, teaching style, or some other element (U.S. Department of Education, 2002a).

2.5 Trends in Teaching and Non-teaching Personnel

2.5.1 In the past decade, the number of teacher and non-teaching personnel (expressed as full-time equivalents) in schools in the United States has grown steadily. From 1990 to 2001, the number of public school teachers grew from 2.4 million to 3.0 million, while the

number of private school teachers increased from 355,000 to 390,000. More public school teachers teach at the elementary school level (1.7 million) than at the secondary school level (1.1 million); a minority of teachers, 0.2 million, were unable to be classified at either the elementary or secondary level, and may teach at both levels. (U.S. Department of Education, 2003b) From 1955 to 2001, the average pupil-teacher ratio in public schools dropped from 27:1 to 16:1, while in private schools it dropped from 32:1 to 15:1 (U.S. Department of Education, 2003b).

2.5.2 From 1990 to 2000, the number of school district administrative staff in elementary and secondary public schools increased 31 percent, from 75,900 to 99,600 (U.S. Department of Education, 2003b). At the same time, the number of school principals, who manage the daily operations of a particular school, increased 11 percent from 127,400 to 141,400. The number of guidance counselors increased 22 percent from 80,000 to 97,400, accompanied by a slight decrease in the number of pupils served per counselor (516 to 485). The number of librarians working in public schools was 54,000 in the fall of 2000, up from 49,900 in 1990, an increase of 8 percent (U.S. Department of Education, 2003b).

2.5.3 The number of support staff workers (secretaries, school nurses, cafeteria workers, custodians) employed by public schools has increased 28 percent in the past 15 years. Support staff workers now make up 30 percent of the public school workforce (U.S. Department of Education, 2003b). Such growth is due, in large part, to the increasing demands resulting from the large proportions of students who now require special services, such as special education students and language minority students Furthermore, support staff are needed to administer the free and reduced-price lunch program for which about a third of all students are eligible (U.S. Department of Education, 2002c).

2.5.4 The most dramatic increase among non-teaching personnel has occurred among instructional aides, whose numbers rose 62 percent in the last ten years (from 396,000 in 1990 to 642,300 in 2000). Instructional aides now comprise 11 percent of the public school workforce, up from 1.7 percent in 1969–70. Also known as "paraprofessionals," instructional aides provide tutoring, assist with classroom management, provide computer and media assistance, help with parental involvement, and even serve as language interpreters, in addition to other activities.

2.5.5 Under NCLB, paraprofessionals may only serve as an instructor under the direct supervision of a fully qualified teacher. In addition, paraprofessionals may only facilitate instruction if they have met certain academic requirements: They must have at least an associate's degree or two years of college, or they must meet a rigorous standard of quality through a formal state or local assessment.

2.5.6 The growth in instructional aides reflects the increasing number of responsibilities that public schools have assumed in the United States. This is particularly evident in special education, where students require extra support in the form of counselors, special education teachers, and instructional aides.

2.6 Indicators of Teacher Shortages

2.6.1 In 1999, it was estimated that the United States would need to hire between 1.7 and 2.7 million new teachers over the next decade (Hussar, 1999). This was partially to replace a wave of retiring teachers and partially to cope with rising enrollments and policies designed to reduce the number of students per class. Since then, the economic downturn

in the United States has alleviated nationwide teacher shortages in the near term, as people seek more stable employment in the public sector. Indeed, there are no reliable data on teacher shortages in the United States, largely because it is impossible to prove that districts and schools are not filling the vacant positions.

2.6.2 Supply problems are, however, severe in some fields. Today, there are acute shortages of mathematics and science teachers—compared to subjects such as English and history—earning these courses the distinction of "hard-to-staff" subjects and forcing policy-makers to consider policy solutions to ease staffing (Murphy et al., 2003). Adding to the pressure to solve shortfalls in math and science is the growing importance of technology. Recruiting teachers in these subject areas in schools may remain difficult, given continued competition for staff in the same areas of expertise in industry and government.

2.6.3 Other subject areas do not face as much competition from other professions but teacher preparation programs still do not train enough people to satisfy the burgeoning demand in specific areas. Traditional teacher preparation programs, for example, produce insufficient numbers of English as a second language teachers and special education teachers to meet the demand.

2.6.4 Shortages also have a geographical dimension. Schools in the Southwest and West, the fastest-growing areas in the nation, report acute shortages of qualified teachers, and low-income urban and rural areas also face difficulties in attracting qualified teachers (Murphy et al., 2003).

2.6.5 While the aging of the teaching workforce is a concern, attrition of less experienced teachers has also garnered attention in the United States. Statistics show that in 2000 and 2001, 8.5 percent of teachers with between one and three years of experience left teaching. While some of these leave the profession altogether, others eventually return. A.J. Wayne has reported one-quarter of the teachers hired each year have some prior teaching experience (Wayne, 2000). Of all teachers who left the field during 2000 and 2001, 19.5 percent have only one to three years of teaching experience, and 37 percent have experience of 20 years or more (U.S. Department of Education, 2004).

2.6.6 There are many teachers in the United States who are working “out-of-field,” or teaching a subject for which they were not trained. [*No Child Left Behind* seeks to amend this imbalance by requiring that all teachers be “highly qualified,” for the definition of highly qualified see 4.5.3] In 2000, 80 percent of public secondary school mathematics teachers would be considered “highly qualified”. Among teachers of foreign languages in public secondary schools in 2000, just 63 percent would be considered highly qualified (Table 1). Research also reports a lack of qualified teachers in the sciences and special education (Murphy et al., 2003).

Table 1: Percentage of Fully Qualified Teachers in Subject Taught, Upper Secondary Education 1990, 1995 and 2000

	Language of instruction	Mathematics	Sciences	Foreign languages	Information and computer technology	Vocational subjects
Public schools						
2000	83.5	80.4	82.8	63.1	13.6	66.8
1995[1]	71.3	67.7	73.4	62.7	*a*	*a*
1990[2]	68.9	67.5	72.4	56.3	*a*	*a*
Private schools						
2000	49.4	49.2	43.7	30.0	0.0	39.0
1995[1]	65.1	58.5	69.6	51.7	*a*	*a*
1990[2]	63.7	62.3	76.8	52.8	*a*	*a*
Public and private schools						
2000	78.4	76.0	76.6	57.3	10.2	65.9
1995[1]	70.5	66.5	72.9	61.2	*a*	*a*
1990[2]	68.2	66.9	73.1	55.8	*a*	*a*

a Data not applicable because the category does not apply.
[1]Schools and Staffing Survey 1993–94 data are being used for 1995.
[2]Schools and Staffing Survey (SASS) 1990–91 data are being used for 1990.

Source: U.S. Department of Education, 2004e, Compiled from the National Center for Education Statistics, Schools and Staffing Survey, "Public Teacher Questionnaire," 1990-91, 1993-94, and 1999-2000 and "Charter Teacher Questionnaire," 1999-2000.

2.7 Teachers Unions

2.7.1 There are two national teachers unions: the National Education Association and the American Federation of Teachers, both of which serve to represent teachers in the collective bargaining process. These groups also work to influence policy through their representation in various organizations that govern the training and certification of teachers, such as independent state licensing boards and national accrediting agencies for teacher preparation programs. In both 1995 and 2000, about 79 percent of public school teachers belonged to a teachers union.

2.7.2 Of the two national unions, the National Education Association, which began as a professional association for educators, is the larger, with 2.7 million members, including

preschool and postsecondary employees. The American Federation of Teachers predominantly operates in urban school districts and has about one million members, including teachers, non-teaching school personnel, healthcare workers, and state and municipal employees. While all public teachers belong to a union, most private and charter school teachers do not. Research shows that unionization and collective bargaining are associated with higher teachers salaries, benefits, working conditions, and job security, likely enhancing both the attraction and retention of teachers (Stone, 2000).

2.8 Conclusion

2.8.1 In the United States, decisions on school administration and the qualification of teachers are determined by each state. Although each state operates its education system distinctly, similar trends have developed nationwide. Further, there is national recognition of the need for schools to be staffed with highly qualified teachers who represent a diversity of ethnic backgrounds, and for clear lines of accountability in school administration. Finally, as many current teachers begin to move toward retirement, school districts across the country are looking to find creative and effective ways to recruit and retain highly qualified teachers.

Chapter Three
ATTRACTING HIGHLY QUALIFIED PEOPLE INTO THE PROFESSION

3.1 Introduction

3.1.1 Concerns about the ability to meet the demand for new teachers are accompanied by a policy debate over what characteristics identify a teacher as "highly qualified," and how best to recruit in high-need areas. A variety of policy measures, including financial incentives and alternative certification programs, have been used in many states with varying degrees of success.

3.1.2 Under *No Child Left Behind*, the federal government requires states to set teaching standards for public schools and requires that teachers have mastery in their field. Conversely, the federal government does not have a role in regulating the highly contested issue of salaries and financial incentives for public school teachers, leaving these policy decisions to state and local authorities. This chapter defines the broad context of debate in attracting public school teachers and presents statistics on current trends, salaries and working conditions, as well as on policy initiatives and impact.

3.2 Defining "Highly Qualified"

3.2.1 The debate about what it means to be a "highly qualified" teacher centers on the entry requirements and standards of the profession. Concerns about the ability to meet the demand for new teachers are accompanied by serious questions about the attributes and qualifications of the people currently being attracted to the profession. Discussion has focused largely on the central questions of training, pedagogy and content knowledge, on what attributes and qualifications a person needs to teach, and how they are best acquired.

3.2.2 On one end of the spectrum is the belief that extensive teacher preparation programs place unnecessary barriers in the way of attracting the most talented teachers; that students will benefit most from teachers with strong academic backgrounds and extensive knowledge of curricular content. At the other, is the belief that skill in teaching and a deep commitment to reaching children are more essential qualities, and that requisite academic content knowledge can be acquired in a good preparation program. While some elements of both approaches are needed for quality teaching, the two sides remain at odds over the proper balance.

3.2.3 Some of the disagreement over the attributes required of an able teacher can be traced to a long history of mistrust over judging a person's worth solely by his or her previous academic achievement. This view reflects a broader tension in American intellectual history between a commitment to scientific knowledge and a type of anti-intellectualism emanating from philosophers such as Jean Jacques Rousseau. Practical skills, creativity, and critical thinking are valued over "merely verbal knowledge" (Hirsch, 1996).

3.2.4 Noted American historian Richard Hofstadter chronicled the deep roots and resiliency of American anti-intellectualism, writing "the common strain that binds together the attitudes and ideas which I call anti-intellectual is a resentment and suspicion of the life of the mind and of those who are considered to represent it; and a disposition constantly to minimize the value of that life" (Hofstadter, 1963). One of the most important American thinkers of the 19th century, Ralph Waldo Emerson, held powerfully anti-intellectual beliefs. "Education!" he wrote in his journal, "We are shut up in schools and

college recitation rooms for ten or fifteen years and come out at last with a bellyful of words and do not know a thing!" Charles Prosser expressed American anti-intellectualism even more forthrightly as it pertains to what children should learn: "business arithmetic is superior to plane or solid geometry; learning ways of keeping physically fit, to the study of French; learning the technique of selecting an occupation, to the study of algebra; simple science of everyday life, to geology; simple business English, to Elizabethan classics" (Hirsch, 1996).

3.3 Trends in Teacher Achievement

3.3.1 Currently, standards for teacher preparation are highly variable and reliant on the policies of institutions for teacher education (also called "schools of education"). Many schools of education require that a prospective teacher meet an academic standard in order to be admitted, others are housed in higher education institutions that have modest admission criteria (or criteria that are so low as to be obtainable by almost any high school graduate).

3.3.2 Additionally, the teaching profession presently attracts a disproportionately high number of candidates from the lower end of the distribution of academic ability, as measured by college entrance exams. According to data collected by the National Center for Education Statistics, college students with low examination scores are more inclined to major in education and become primary or secondary school teachers than those with the highest scores (Henke et al., 1996).

3.3.3 On average, education majors have significantly higher grade-point averages in college than other students. Considering they do not perform as well as other groups on college entrance exams, this statistic is an indication that the program of study may not be as challenging as for other fields. According to the National Center for Education Statistics, the average grade in an education course in 1996 was a 3.41 (out of a 4.0 scale) in comparison with 2.96 in the social sciences, 2.67 in science and engineering courses and 2.68 in advanced math or calculus (U.S. Department of Education, 1996, Table C3.4, C3.5).

3.4 Trends in Teacher Recruitment

Demographic Trends

3.4.1 In the United States, there are smaller numbers of men teaching than women, and there are more teachers who are white than who are from racial and ethnic minority groups. Three-quarters of all elementary and secondary school teachers are women (U.S. Department of Education, 2003b, Table 68) and the proportion of teachers from racial and ethnic minority groups is low in comparison to the public school population and to the U.S. population as a whole.

3.4.2 In 2000, 39 percent of U.S. students enrolled in public schools were members of a racial or ethnic minority group (U.S. Department of Education, 2001d) compared to 15.7 percent of the public school teaching force (U.S. Department of Education, 2004f). Accordingly, there was a far higher percentage of white teachers than white students (84 percent of teachers versus 60 percent of students) and a far smaller percentage of African-American and Hispanic teachers than African-American and Hispanic students (about 8 percent of African-American teachers versus 17.2 percent of African-American students

and about 6 percent of Hispanic teachers versus 15.6 percent of Hispanic students) (U.S. Department of Education, 2001d and 2004f).

3.4.3 Nevertheless, the share of teachers who are from a racial or ethnic minority group has increased two percentage points since 1993-94. Data on newly hired teachers also suggest that racial and ethnic minorities are entering the teaching profession in increasing numbers. By 1993–94, minorities represented 18 percent of newly prepared teachers, up from 8.7 percent in 1987–88 (U.S. Department of Education, 2000).

3.4.4 The U.S. Department of Education does not collect data on the age of those who enrolled in and/or completed teacher training programs. Overall, however, it appears that individuals are waiting longer to prepare for teaching as a career. By 1993-1994, just 35 percent of newly hired teachers were under the age of 25, compared to nearly half of all newly hired teachers (48 percent) in 1987-1988 (Boser, 2000).

3.4.5 Teacher union data on the educational attainment of teachers' parents give some indication of teachers' socioeconomic background. Overall, the educational attainment of teachers' parents has remained about average over the last 30 years (National Education Association, 2003). A majority of younger teachers, ages 39 and under, reported that both of their parents had "at least some college education" even if they did not complete their college degrees (National Education Association, 2003).

Declining Interest Overall

3.4.6 The declining share of college students expressing interest in teaching as a profession poses a challenge to attracting talented individuals to the profession. From 1968 to 1982, the percentage of U.S. college freshman indicating that they intended to become teachers dropped from 26 percent to an all-time low of 6 percent. In recent years, there has been a slight increase in interest to 10 percent of college freshmen, but the level of interest remains well below its peak of the 1960s (Astin, 2002). In part, this reflects the fact that women, for whom teaching used to be one of the few available professions, now have access to a broader range of careers in such fields as medicine, law, and business.

3.4.7 Because of the decentralized nature of the U.S. university system, it is difficult to determine the total enrollment and composition of college students who are studying to become teachers. A U.S. Department of Education survey of all college graduates from 1999-2000, the most recent year for which there are national data, found that 108,168 individuals graduated from undergraduate teacher education programs (U.S. Department of Education, 2002c, Table 255). Additional research found that of college graduates who were prepared for teaching in 1992-93, only 47 percent applied for teaching positions. Of these, 72 percent were offered a teaching position, and 90 percent of those offered a teaching job accepted the position (U.S. Department of Education, 1996).

3.4.8 There are no firm data to state conclusively why so many teaching candidates do not enter teaching immediately after college. The reasons appear to be varied. One analysis found that teaching candidates who are given other career choices often decide not to teach. Interestingly, individuals who chose to teach in a public school were less likely to have scored well on their college entrance exams than those teaching candidates who chose not to teach (12 percent versus 18 percent) (Boser, 2000).

Attracting Teachers in Key Shortage Areas

3.4.9 In the United States, policy-makers have long been concerned about attracting public school teachers in key shortage areas, especially in mathematics and science, which are considered important areas for the nation's economic strength and military defense. Since 1958 when the *National Defense Education Act* was enacted in response to the launch of Sputnik, the federal government has sought to increase the number and improve the quality of mathematics and science teachers.

3.4.10 Similar efforts to shore up mathematics and science instruction continued throughout the 1960s, 1970s and 1980s. For instance, in 1984, the Title II Dwight D. Eisenhower Mathematics and Science Education State Grant Program began awarding funds to school districts to provide professional development for public school teachers in mathematics and science, a program that continued up until the year 2001 when *No Child Left Behind* was enacted. In spite of these investments, recruiting in areas like mathematics and the sciences remains difficult, since mathematics and science majors typically have higher-paying career options in industry and government.

3.5 Salaries, Working Conditions, and Benefits

Salaries

3.5.1 Public school teacher compensation is a controversial issue in the United States. Some data show that public school teachers are paid well relative to other occupations that require similar preparation and training. Other studies indicate that public school teacher compensation is well below that of other professionals. This distinction often results from different ways of measuring both actual earned salary and employee benefits.

3.5.2 Teacher work hours per year may be fewer than for other occupations, based on the length of the school year in days (average of 180 days for students, slightly longer for teachers) and the required hours of work. A typical public school in the United States, for example, begins the school year in mid-to late August and ends in June. A typical school day may last from 8:00 am until 3:00 pm. Due to the difference in a teacher's work schedule from that of other professionals who typically work 40 hours per week, 50 weeks per year, salary comparisons are not calculated on an equal basis.

3.5.3 Due to differences in estimates of annual salary, it is useful to examine the average hourly pay rate for teachers in comparison with other profession. Some, however, argue that adjusting salary comparisons to public school teachers' shorter workday and year by using hourly comparison is unfair, since teachers should not be expected to bridge disparities in income incurred over the course of the year by finding part-time or short-term employment (though in practice, many do). Figure 2 shows hourly pay rates calculated by the U.S. Bureau of Labor Statistics for public school teachers and other comparable professions. According to these rates, only engineers, architects and surveyors in private practice earn more per hour. Registered nurses, another unionized, state-licensed profession, earn significantly less than public school teachers. Figure 3 shows average annual salary[3]. Illustrating the differences in calculation, these data indicate that registered nurses generally earn more per year than public school teachers.

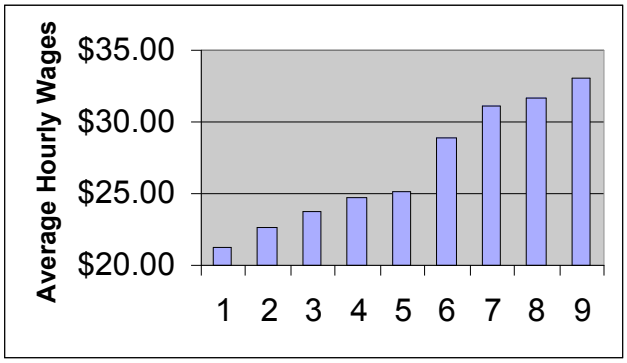
[3] Annual salary refers to the teacher's salary per year, not the 9 month salary inflated to a 12 month amount.

3.5.4 Additionally, while hourly rates may account for the time public school teachers must spend in school, they may not account for all of the time that teachers work on classroom-related activities. According to a U.S. Bureau of Labor Statistics survey of employees, public school teachers worked on average 37 hours per week. The National Education Association annual survey of teachers reports the same finding of 37 hours at school but also indicated that teachers report putting in another 10 hours outside school (National Education Association 2003).

3.5.5 The nation's second largest teachers union, the American Federation of Teachers, reports that, on average, beginning teachers earned about $10,000 less than other new college graduates in 2002 (American Federation of Teachers, 2003). However, some researchers have disputed the salary data that the AFT uses as a basis for comparison. Another estimate asserts that between 1999 and 2001, first-year teachers earned, on average, $3,000 less than other college-educated individuals under 30 years of age (Podgursky, 2003).

3.5.6 Though the public school teaching profession has seen significant salary increases in the last decade, so too have other professions. Between 1991 and 2001, median salaries for persons with a bachelor's degree rose by 33 percent for males and 44 percent for females (U.S. Census Bureau, 2002a). During the same period, the estimated average for public school teachers rose by 31 percent (U.S. Department of Education 2002d, Table 77). Thus, the base salary of teachers started out further behind, and teacher compensation increased at a slightly lower rate for teachers than for other professions.

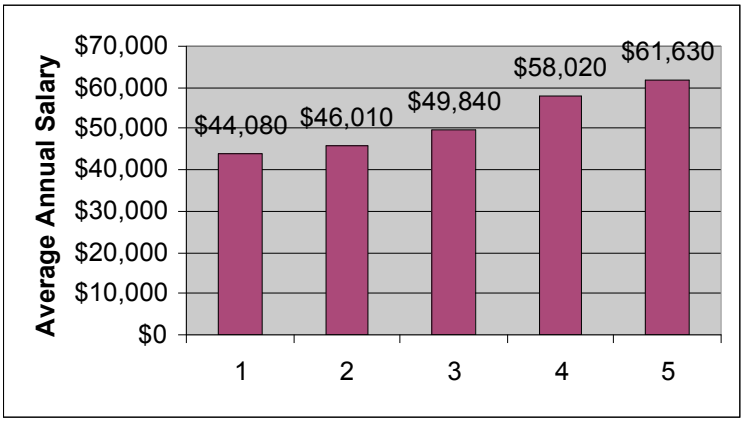
Figure 2 – Hourly Salary of Teachers, Compared to Other Professions, 2003



1. Accountants and auditors (state & local government)
2. Computer programmers (state & local government)
3. Accountants and auditors (private)
4. Registered nurses (state & local government)
5. Computer Programmers (private)
6. Engineers, Architects, and Surveyors (state & local government)
7. Secondary Teachers (public school)
8. Elementary Teachers (public school)
9. Engineers, Architects, and Surveyors (private)

Source: U.S. Bureau of Labor Statistics, National Compensation Survey, 2003

Figure 3 – Annual Salary of Teachers, Compared to Other Professions, 2002



1. Elementary School Teachers (excluding Special Education)
2. Secondary School Teachers (excluding Special Education)
3. Registered Nurse
4. Architecture and Engineering Occupations
5. Computer and Mathematical Science Occupations

Source: U.S. Bureau of Labor Statistics, 2002 National Occupational Employment and Wage Estimates

Working Conditions and Cost of Living

3.5.7 A discussion of public school teacher salary levels should also note that national salary averages mask considerable variation from district to district and state to state. Urban areas in the United States, for example, tend to have a high cost of living. Yonkers, a suburb of New York City, has a minimum starting salary of $41,671 and a maximum salary of $84,310. In another city in New York state, Buffalo, the range starts much lower at $30,387 for a starting teacher and rises to $54,432 at the top of the salary scale (American Federation of Teachers, 2003).

3.5.8 The high cost of living in urban and suburban school districts is a deterrent to beginning public school teachers. Some states and districts have responded with housing assistance for new public school teachers in the form of home loans, low-interest mortgages, and tax credits. Six states provide this type of incentive; however, only three target this aid to attract candidates to fill subject-area shortages and only three target housing assistance toward high-need schools (Quality Counts, 2003).

3.5.9 The National Education Association found that 64 percent of all public school teachers working in 2000-01 earned supplemental income, with a mean of $3,528. Some teachers earn more by participating in the performance-based pay system offered by some states. Thirty-two states offer extra compensation, ranging from $1,000 to $20,000, to teachers

who earn an advanced certificate of mastery from the private National Board for Professional Teaching Standards (NBPTS).

3.5.10 A survey conducted in 2000 by a non-government research organization, Public Agenda, found that a large percentage of new public school teachers and administrators thought teachers were underpaid. However, new teachers did not think that higher pay would result in higher-quality teachers or happier teachers. By wide margins, new teachers indicated that they would sacrifice higher pay to work in a school with well-behaved students, parental involvement and support from their administrators (Public Agenda, 2000).

3.6 Policy Initiatives and Impact

Financial Incentives

3.6.1 States and districts have enacted various policies and initiatives to attract candidates to the public school teaching profession. Since districts are often locked into a uniform salary schedule for teachers, financial incentives to attract teachers in high-need positions are sometimes designed to supplement the standard salary scale. Examples of these initiatives include assistance in the form of federal student loan forgiveness, scholarships, waiving of licensing fees, housing assistance, and signing bonuses. Twenty-four states offer some type of assistance; however, just 18 of these states target this aid to attract teachers to subject-area shortages and only seven target this assistance toward filling positions in high poverty area schools (Quality Counts, 2003).

3.6.2 Signing bonuses for public school teachers are another way to attract individuals to the profession; yet, only five states offer these bonuses. Massachusetts and New York offer bonuses for teachers of subject areas in which there are shortages, and California and Massachusetts target their bonuses toward high-need schools. The Massachusetts program garnered the most interest and scrutiny because of its generous incentive: a $20,000 signing bonus to attract talented mid-career professionals and recent college graduates. However, with the economic downturn in the overall economy that has affected state revenues, the program has been radically reformed in the past year. The California and Massachusetts' programs were criticized for not meeting the states' goals of attracting and/or retaining high-quality teachers for urban classrooms. Twenty percent of the first cohort of bonus recipients left teaching after the first year and less than half of the bonus recipients chose to teach in the 13 designated high-need districts (Fowler, 2003).

Alternative Certification Programs

3.6.3 Many districts have developed "alternative certification" programs that allow candidates to bypass some of the existing state certification requirements. These programs are state-certified preparation programs that often allow teachers to begin working more quickly, but generally require preparatory coursework to be completed after school hours. The federal government provides guidance for these programs to ensure that their participants will meet the requirements of a highly qualified teacher.

3.6.4 These "alternative certification" programs aim to improve the attractiveness of teaching as a career, although opponents worry about quality control and the effectiveness of teachers who are not prepared in the traditional way. Many alternative certification programs have been able to attract a higher percentage of minorities to the profession and for this reason are welcome by many urban and more diverse school districts.

3.6.5 Although many states offer alternative certification, their programs are not necessarily less burdensome. Many require the same number of courses as traditional teacher preparation programs and new teachers are often expected to complete these requirements in the summer and in the evenings after school. Requiring additional coursework after school hours may limit the effectiveness of alternative programs as a recruitment tool. For more information on alternative certification see section 4.9.

Foreign Nationals

3.6.6 In general, districts throughout the United States have not sought public school teachers from other countries to work in their schools. There are estimated to be fewer than 15,000 teachers in the entire nation who are not U.S. citizens (Barber, 2003). Although they are mostly sponsored directly by local school districts, the largest single sponsor, Visiting International Faculty, a private corporation, sponsored only 1,800 teachers in the school year 2002-03 (Barber, 2003). The relatively small percentages of international teachers recruited—about 0.5 percent despite acute subject-area shortages—may be due to the difficulties resulting from immigration and labor regulations in United States. Unlike for some other professions, there are no "teacher-specific" visas. Instead, some may apply for work visas (H category), and others may come on exchange visas (J category).

3.7 Conclusion

3.7.1 The environment for public school teachers is expected to change substantially in the next several years, and these changes are already taking place as state and local education agencies respond to NCLB. To comply with NCLB requirements, teacher training programs have been bolstering subject mastery, and alternative certification has been expanded to target highly qualified mid-career professionals and recent college graduates to enter the teaching force. The legislation has given until 2006 to allow time for these requirements to be fully implemented.

Chapter Four

EDUCATING, DEVELOPING, AND CERTIFYING TEACHERS

4.1 Introduction

4.1.1 There is no single path to becoming a teacher in the United States. Well over 1,000 separate tertiary institutions prepare the future teachers of the United States, and no single entity governs the work or performance of any of these programs. This decentralized system, while potentially allowing for flexibility and responsiveness to local needs, has become a focus of concern for policy-makers who aim to strengthen teacher preparation. In this chapter, the systems of teacher education in the United States, and the major concerns of policy-makers and administrators, are described in greater detail. Both traditional and alternative methods of preparation and certification are presented along with research and data that reveal potential benefits and limitations of each method.

4.2 Teacher Education in the United States

4.2.1 In the United States, public school teachers are licensed by the states in which they work. Every state requires teachers to hold a state certificate in order to qualify for employment in a public school, though the requirements for certification vary from state to state. In general, to be certified, teachers must hold at least a bachelor's (first-level university) degree and pass a variety of state licensure exams and a criminal background check. The education component of the requirements is typically made up of general coursework, subject-area coursework (e.g., mathematics, science, or history), professional courses (focusing on child development, pedagogy or instructional methodologies, and educational theory), and a period of student teaching.

4.2.2 Institutions that train public school teachers in the United States range from large public and private research universities to small liberal arts colleges. There is no conclusive agreement on the number of teacher preparation institutions in the United States, though some estimates claim well over 1,000. The large research institutions tend to have separate colleges of education that both prepare teachers for state certification and offer graduate degrees in education, while liberal arts colleges do not offer graduate degrees, but do house teacher training programs that provide the pedagogical coursework necessary to satisfy state certification requirements.

4.3 Data, Trends and Factors

State Certification

4.3.1 To be certified to teach at the secondary school level, 25 states require candidates to major in the subject area they will teach (for example, mathematics or history), while another 11 states require at least a minor. Of the remaining states, nine require a subject-matter exam and six do not (Council of Chief State School Offices, 2002). As in most aspects of the U.S. education system, decisions on teacher certification are left to the states, and some create separate requirements for those who teach in specific disciplines. Some states, for example, may require teachers who teach in specific subject areas (such as foreign language) to have more preparation.

4.3.2 To teach at the elementary school level, states typically require a major in education with general coursework including both the humanities and the sciences. States certify teachers to teach certain subjects with varying degrees of specificity; some will endorse a teacher to teach secondary school science, while others grant separate endorsements for chemistry, physics, biology, and so on (National Association of State Directors of Teacher Education and Certification (NASDTEC), 2003). In most states, the initial certificate is valid for two or three years, whereupon teachers must apply for a standard or regular certificate.

4.3.3 The most frequently used exams for certification are Praxis I, a basic skills test, and Praxis II, tests of content and professional knowledge, both developed by the private Educational Testing Service (Potts, et al., 2002). There are more than 150 types of Praxis tests from which states can choose as a requirement for certification. These tests have also been widely criticized for their lack of academic rigor. One study estimated the content of the Praxis I tests to be equivalent to what an average eighth grade student is expected to know, and the content of the Praxis II tests to be equivalent to what an average tenth grader is expected to know (Mitchell and Barth, 1999).

4.3.4 States also decide at what point a potential teacher must pass these tests. Many candidates are now required to pass the state's basic skills exam, most commonly the Praxis I, before being admitted to a teacher training program. The Praxis II tests, including both the subject-matter exam and the teaching practice exam, are typically taken upon completion of the teacher training program. Virtually every state sets the passing score on such exams well below the national median score, making these exams a minor hurdle on the way to certification. In 2000–01, the aggregate pass rate for all assessments was 93 percent among those who had completed a teacher training program. The rates ranged from 79 percent of completers in the District of Columbia to 100 percent in Arkansas, Michigan, Montana, Oregon and West Virginia (U.S. Department of Education, 2002).

Teacher Training Programs

4.3.5 Sixty percent of teacher preparation institutions are private and nonprofit, 37 percent are public institutions that receive substantial financial support from states, and 3 percent are for-profit institutions (Feistritzer and Chester, 1999). While public institutions make up a smaller share of the teacher preparation programs in the nation, their graduates account for 74 percent of newly trained teachers in the United States. Another 25 percent graduate from private nonprofit institutions, while just 1 percent graduate from for-profit institutions. Large universities train the bulk of the nation's teachers: The 243 higher education institutions with total enrollments greater than 18,000 students account for 46 percent of all newly trained teachers (Feistritzer and Chester, 1999).

4.3.6 Most teacher training programs are four-year undergraduate programs that provide degrees in a particular subject area such as history or in general education. Secondary school teachers often pursue college degrees in the subject they will be teaching, and elementary school teachers usually receive degrees in general education. Some programs provide a combined bachelor's degree with a master's degree in education by adding a fifth year to the undergraduate course of study, reflecting the recommendation by prominent foundations and task forces that teacher training be moved from the undergraduate level to the graduate level (Carnegie Task Force on Teaching as a Profession, 1986, and Darling-Hammond, 1996). There is also a trend toward the preparation of teachers who are mid-career professionals as well as recent college graduates who desire to enter the teaching profession. A survey of teacher training

programs found that 28 percent of newly trained teachers in 1998 had begun their preparation to teach after they had already earned at least a bachelor's degree (Feistritzer and Chester, 1999). Graduate programs typically last one to two years.

4.3.7 Some undergraduate teacher training programs allow students to begin the program immediately, while others require candidates to apply to the program after two years of general education. Some programs require passage of a basic skills test before entry, while a majority require a minimum grade-point average, recommendations, interviews, and experience working with children. At the graduate level, teacher training programs typically require applicants to submit scores from the Graduate Record Examination, recommendations, and transcripts of grades from the undergraduate institution.

4.3.8 Virtually all states and teacher training programs require field experience, including several weeks of in-school observation and a period of student training under the guidance of an experienced teacher.

4.4 Current Policy Concerns

4.4.1 Individual states, in collaboration with professional education associations and charitable foundations, are working to strengthen the standards for teacher education and certification (Darling-Hammond, 1996, 1997). Most states now either require teacher training institutions to earn accreditation from the private National Council for Accreditation of Teacher Education (NCATE) or have adopted NCATE's standards as the standards for state approval of teacher training programs. Many prominent scholars and policy-makers propose that NCATE accreditation be made mandatory for all of the teacher training institutions in the United States.

4.4.2 Some policy makers and educators believe the goal is actually to decrease the number of institutions that are approved to prepare potential teachers for state certification. For instance, Arthur Levine, president of Columbia University's Teachers College in New York City, writes, "The nation has too many weak education schools, with teachers, students, and curriculums that are not up to the task at hand…. It's time for government to strengthen or close these schools." (Levine, 1999) For others, the problem rests not so much with the number of institutions but more with the academic content and rigor of teacher preparation programs. Frank B. Murray, president of the Teacher Education Accreditation Council, the rival nonprofit accrediting group to NCATE, has argued, "Few standardized educational practices and innovations are grounded in solid research and yet so many of them have had the support of the profession." (Murray, 1998)

4.4.3 Arguing that many teacher training programs do not offer suitably rigorous training, many prominent organizations and policy-makers have proposed that public school principals be given the discretion to hire candidates who have not attended traditional teacher training programs, just as private schools often do (Kanstoroom et.al, 1999; Hess, 2001). These organizations are also promoting the use of alternate routes to the profession that certify public school teachers based on their ability to pass tests examining their knowledge of subject matter and of teaching practices. As such, alternative certification programs are promoted as a way to relieve teaching candidates from the burden of completing an extensive, and sometimes ineffective, teacher education program. In response, schools of education typically resist alternative certification programs for fear of a loss of students and revenue, and teacher unions have

expressed concern that such programs will increase the supply of teachers and therefore reduce wages.

4.4.4 Yet, due to the high need for teachers, many districts employ some uncertified teachers on an emergency or temporary waiver basis, which can be allowed by the state. Typically, the district must attest that it has performed an exhaustive search but has not been able to find a certified candidate. Those working on emergency waivers usually must hold a bachelor's degree (first university level) and pass a state health requirement. Despite the implication that such certification is reserved for rare emergencies, the practice of issuing such waivers is widespread: for instance, in 2000-01, 34 percent of all first-year teachers in California were emergency permit (EP) teachers and 10 percent of all California teachers held emergency permits (Shields, et al., 2001).

4.4.5 Evidence that traditionally certified teachers perform no better than those who enter public schools on emergency certificates, which waives almost all requirements, or through alternative routes has led some policy analysts to call for making teaching more like some professions such as journalism, business, or politics, in which formal training in a university-based professional program is not required to apply for employment (for reviews of the evidence on teacher certification and student achievement, see Goldhaber and Brewer, 1999, and Walsh, 2002).

4.4.6 The national *No Child Left Behind Act*'s requirement that all teachers in core academic subjects be "highly qualified" by January 2006, has lent new urgency to these critiques. To be deemed highly qualified, teachers must have: 1) a bachelor's degree, 2) full state certification or licensure, and 3) demonstrate competency in each subject they teach. Under these requirements, newly hired secondary school teachers must hold full certification from their states, thus, teachers with emergency certificates will no longer be qualified to fill teaching positions. In addition to state certification and a bachelor's degree all teachers must demonstrate their subject-matter knowledge, either by having completed a college major in the subject or subjects they teach or by passing a rigorous exam of their content knowledge.

4.5 Recent Changes in Employment Requirements

4.5.1 In response to the lack of uniformly rigorous subject-area preparation among the nation's teachers, the national *No Child Left Behind Act of 2001* requires that all teachers in core subject areas be "highly qualified" by the end of the 2005-06 school year. Under Title II of the national law, grant funds to state and local education agencies can be used for anything from professional development, to developing subject-matter tests for teachers and reforming a state's system for certifying teachers. States must develop plans that show how the number of classes being taught by highly qualified teachers will rise each year in order to reach the goal of 100 percent highly qualified within the next three years. In the last two years, federal funding for programs focusing on teacher quality has increased by $1.02 billion, or 46 percent, under Title II.

4.5.2 To be deemed "highly qualified", teachers must hold full certification—not emergency or temporary certificates—from their states. Newly hired elementary school teachers must hold a bachelor's degree, and pass a rigorous test of subject knowledge and teaching skills in reading/language arts, writing, math, and other areas of the basic elementary curriculum. Newly hired middle school and high school teachers in core academic areas

can demonstrate their subject-matter competence by passing a rigorous exam of their content knowledge; majoring in their subject as an undergraduate; earning a graduate degree in their subject; accumulating the coursework equivalent to an undergraduate major; or holding an advanced certificate or credential which may include earning a credential from the recently formed American Board for Certification of Teacher Excellence, or the National Board for Professional Teaching Standards. The core academic subjects are defined as English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography.

4.5.3 Teachers who are not new to the profession can demonstrate their competence through any one of the above options or by meeting a "high, objective, uniform state standard of evaluation." This standard of evaluation must be based on objective criteria, and the method for evaluating whether teachers are highly qualified must be backed by a "strong and compelling rationale," according to guidance issued by the U.S. Department of Education.

4.5.4 Under Title II of *No Child Left Behind*, teachers may enter public school teaching through alternative certification programs, but such programs must adhere to strict guidelines. Typically, alternative certification programs allow potential teachers to begin teaching before they have earned full state certification. They are designed to enable mid-career professionals and college graduates without majors in education to enter the teaching profession without taking a year or two off from work while finishing their required coursework. In some programs, candidates work as full-time teachers while completing their courses at night and on weekends.

4.6 Employment Requirements in Charter Schools

4.6.1 Charter schools, which are publicly funded but run independently of the traditional school district structure, present a special case. States vary in the degree to which they require teachers in charter schools to hold state certification. Respecting the states' desire to keep charter schools free of most regulations while holding them accountable for performance, federal law requires charter school teachers to meet the *No Child Left Behind Act*'s requirements for a bachelor's degree and demonstrated subject-matter knowledge, but they need not hold full state certification if the state's charter school law does not require it.

4.6.2 Some research suggests that charter schools employ a higher percentage of uncertified teachers than regular public schools. In 2000, a comparative study of personnel policy in seven states revealed that while certified teachers made up more than 90 percent of the teaching staff in a majority of public schools (90 percent), certified teachers made up more than 90 percent of the teaching staff in only 40 percent of charter schools. In a quarter of the charter schools surveyed, uncertified teachers accounted for a majority of the teaching staff (Ballou and Podgursky, 2001a). In open-ended responses, charter school administrators made statements such as, "I am not concerned with certification or degrees in education, but with hiring the most qualified teacher to work within a specific field." Some noted that they "recruit to the discipline;" one indicated that they "would much rather hire someone with a master's in literature than an M.A. in education."

4.7 Employment Requirements in Private Schools

4.7.1 In this respect, charter schools behave more like private schools, whose hiring practices are generally unregulated by government in the United States. Private school teachers are not required to hold state certification and are not subject to any of the requirements of the *No Child Left Behind Act*. Certification policies vary among private schools. In Catholic schools, which account for the largest segment of the private school universe, 74 percent of elementary and secondary school teachers are state-certified in their primary teaching field, versus 50 percent in other religious schools and 56 percent in nonreligious schools. The percentages are generally higher at the elementary level and lower at the secondary level; in fact, at the secondary level of private nonreligious schools, just 35 percent of teachers hold state certification. In contrast, over 90 percent of all public school teachers are state-certified (Ballou and Podgursky, 1997, and 2001a).

4.8 Influences on Teacher Education

4.8.1 Teachers unions and professional associations are active participants in policy making through their participation in national accreditation organizations. Of the nation's teacher training institutions[4], over 550 are accredited by the National Council for Accreditation of Teacher Education (NCATE), the leading accreditation agency for teacher training programs, and another 120 have applications pending approval (Vergari and Hess, 2002). Just eight states require that teacher training programs earn accreditation from NCATE, but 46 states have established partnerships with NCATE that base state-approval standards for teacher education on NCATE's guidelines. Moreover, NCATE-accredited institutions train more than 70 percent of the nation's teachers (Vergari and Hess, 2002).

4.8.2 Teachers unions provide NCATE with significant financial support and play an important role in governing the organization and in determining its accreditation standards. Other professional associations for teachers, such as the major subject-based associations (e.g., the National Council of Teachers of Mathematics and the National Council of Teachers of English), are also members of NCATE, and the content standards developed by these associations carry considerable weight with both NCATE's accreditation standards and the content of initial teacher education.

4.8.3 Teachers and their unions and professional associations also work to influence the state legislatures and regulatory agencies that develop policies regarding teacher licensure. Teachers and teacher union representatives also serve on the professional standards boards that are established in all but six states. In most states, these professional standards boards have just an advisory role on matters of certification policy, but in 16 states they have the power to set and execute policy (Education Commission of the States, 2002).

4.9 Alternative Certification

4.9.1 The past decade in the United States has seen tremendous growth in the number of teacher training programs designed to attract established professionals from other fields as well as recent college graduates who did not take the courses necessary for certification while an undergraduate. Overall, it is estimated that more than 200,000 individuals have been licensed through such alternative routes to date. In just the past five

[4] The exact number of teacher training institutions is not known; estimates suggest that there are well over 1,000.

years, alternative routes have produced 25,000 new teachers each year (Feistritzer and Chester, 2003).

4.9.2 In 2003, 46 states plus the District of Columbia reported having some type of alternative route to certification, but states vary greatly in the size and scope of their programs. The three largest alternative certification routes by far are established in California, New Jersey, and Texas. Alternatively certified teachers accounted for 18 percent, 24 percent, and 24 percent, respectively, of newly hired teachers in these three states (Feistritzer and Chester, 2003). In most states, however, official alternative certification programs license just a small share of new teachers. Nevertheless, many university- and college-based teacher training institutions are also establishing their own post-baccalaureate programs designed especially for mid-career changers and recent college graduates.

4.9.3 Depending on the state, alternative certification programs are run by the state itself; by local school districts; by traditional teacher training programs in partnership with school districts; or by a private organization contracting with a local school district. Such programs tend to provide several weeks of preservice training during the summer before candidates enter the classroom full time. While working as full-time classroom teachers, candidates must take coursework leading to full certification at night and on weekends. In order to address a perceived unevenness in the quality of alternative certification programs, the U.S. Department of Education requires that these programs offer sustained, intensive mentoring and professional development to new teachers before, and while they progress, toward full state certification.

4.9.4 Research has shown that alternatively certified teachers perform as well as teachers who were licensed through traditional routes, as measured by the performance of their students (Ballou and Podgursky, 1999; Shen, 1997). They also tend to score higher on state licensing exams and provide an important source of racial and ethnic minority teachers. For instance, 48 percent of the California teachers in alternative routes were members of ethnic groups that are underrepresented in the state's teaching workforce. Further, alternatively certified teachers are more likely to hold bachelor's degrees in shortage areas such as mathematics and science (Shen, 1997).

4.9.5 The nongovernmental National Center for Education Information (NCEI) reports that alternatively certified teachers show higher retention rates than their traditionally certified peers. NCEI speculates that because alternatively certified teachers tend to be older and come from other careers, the decision to teach requires a larger investment and thus a more carefully considered choice.

4.9.6 The reliance of alternative teacher training programs on classroom-based instruction may provide new teachers with more support during their early years of teaching. However this approach is not limited to alternative programs alone. Many traditional teacher training programs have used classroom-based learning through the placement of candidates in so-called "professional development schools" from the time they begin their training. The idea is akin to a medical residency, where candidates for the profession are closely observed and mentored as they learn their craft in real-life settings.

4.9.7 Three of the most prominent national alternative certification programs, Troops to Teachers, Teach for America and The New Teacher Project also deserve mention. Troops to Teachers is a U.S. Department of Education and Department of Defense program that encourages the transition of retired military personnel into the teaching profession. The

program provides job-placement assistance as well as a $5,000 stipend toward certification costs or a $10,000 bonus for agreeing to teach in schools serving high percentages of students from low-income families.

4.9.8 Teach for America, a private nonprofit organization, recruits graduates from top universities to make a two-year commitment to teach in an impoverished urban or rural community. It places about 1,800 graduates per year in one of 20 sites across the nation, including New York City, Washington, D.C., and Los Angeles. It has become one of the nation's largest suppliers of teachers. According to the American Association of Colleges for Teacher Education, only 10 percent of traditional institutions produce more new teachers each year. Members receive several weeks of pre-service training the summer before they enter the classroom full time, whereupon they become a part of their state's alternative route program. To date, Teach for America has placed more than 10,000 teachers in disadvantaged schools, and research has shown that its members perform just as well as other teachers in a given district. (Raymond and Fletcher, 2002).

4.9.9 The New Teacher Project is a non-profit project that provides consulting services to district personnel offices and recruits, selects, and trains new teachers. The New Teacher Project has worked with large districts such as New York City and Los Angeles, and placed 6,500 teachers since 1997. Whereas Teach for America places recent college graduates from selective colleges into the classroom, The New Teacher Project focuses on recruiting and training individuals from non-traditional backgrounds (often those who have switched careers) into teaching.

4.10 Induction Programs

4.10.1 The induction and support of new teachers in the United States is primarily the responsibility of local school districts and schools. Of the 50 states, 23 require new teachers to participate in some type of mentorship or induction program, though localities typically control the design and implementation of such programs (Council on Chief State School Officers, 2002). Thus, there are substantial variations in the length and quality of these programs. Overall, 56 percent of public school teachers report participating in a formal support program for new teachers (Hirsch et al., 2001), but these can range from a few days' orientation before the teacher's first day at school to a program of sustained, ongoing mentorship from experienced teachers.

4.10.2 In 35 of the 50 states, new teachers must progress from an initial provisional or probationary license to a renewable standard license. Depending on the state, this process may involve additional coursework requirements, a certain number of years of experience, and positive evaluations from local administrators (Rotherham and Mead, 2003). This probationary period typically lasts one to three years. Of these states, 12 require new teachers to take additional coursework or to earn a master's degree within their first few years of teaching in order to progress to a standard license, while five require teachers to take additional tests or assessments. The state of Connecticut's unique induction program requires teachers to advance through three tiers of certification. Early in their careers, Connecticut teachers must submit portfolios of their students' work to the state education agency in order to demonstrate their proficiency, a rare practice among the states.

4.11 Professional Development

4.11.1 Virtually every state requires public school teachers to participate in a specified number of hours of professional development in order to renew their licenses. A majority of states require six semester hours of professional development (a semester hour would be an hour a week for an academic semester, or 10 to 14 weeks) every three to seven years. States vary widely in their policies, with some requiring additional coursework while others specify only the number of hours, leaving school districts and individual teachers to determine how to meet the requirements.

4.11.2 School districts frequently offer professional development under the terms of their contract with the local teachers union, which specifies a number of training days before or after the school year, or when students will be dismissed early from school while teachers receive "in-service" training during regular school hours. District or school administrators most often determine the focus of such training.

4.11.3 Teachers also exercise a strong degree of control over their own professional development through the choice of coursework to fulfill their requirements. Among teachers, 46 percent reported taking college courses during the previous three years, spending $2,937 on average (National Education Association (NEA), 2003). Many school districts reimburse teachers for tuition expenditures; more than 20 percent of teachers reported receiving support in the previous year.[5]

4.11.4 In recent years, professional development in schools across the nation has evolved to address the increasing reliance on instructional technology as well as the demands of the state standards that require teacher and school accountability for student performance (U.S. Department of Education, 2001c). Among full-time public school teachers, 71 percent reported receiving professional development on the use of computers for instruction in the previous 12 months, compared with 59 percent who reported in-depth study of content in their main teaching field (U.S. Department of Education, 2002d, Table 1.14).

4.11.5 Since 1994, federal law has required individual states to develop content standards outlining what students should know and be able to do at each grade level. As a result, more and more states are relying on professional development to enhance teachers' knowledge of the new standards. As of 2002, about half the states had adopted professional development policies that are aligned with their content standards (Potts, et al., 2002).

4.11.6 Another opportunity for teachers to enhance their career development is provided by the nongovernmental National Board for Professional Teaching Standards (NBPTS). Formed in 1987, NBPTS has granted advanced certification to about 10,000 teachers based on an intensive evaluation of their knowledge and skills. The process requires teachers to

[5] Guidance from the U.S. Department of Education, National Center for Education Statistics, 1996. "Schools and Staffing in the United States: A Statistical Profile, 1993-94." 22.8 percent of public school teachers responded "yes" to the question: "What types of support have you received during the current school year for in-service education or professional development in your MAIN teaching assignment field? (Tuition and/or fees)" http://nces.ed.gov/surveys/SASS/sassib/article.asp?TxtID=79&Yr=1993

submit portfolios of lesson plans, samples of their students' work, and videotapes of their teaching. They are also given a series of written exercises designed to test their knowledge of their subject matter as well as their pedagogical knowledge. Anyone with a bachelor's degree and at least three years of classroom experience in either a public or private school may apply for a certificate that is valid for 10 years. (See Chapter 6 for a more detailed discussion of the National Board.)

4.12 Policy Initiatives and Impact

4.12.1 Although there is wide agreement that the academic standards for teachers need to be raised, there is presently a wide-ranging debate in the United States over the future of teacher certification. The debate is split into roughly two camps: 1) the movement to add greater regulations to teacher certification and related activities, and 2) the movement to lower barriers to teaching for talented individuals.

4.12.2 Those supporting increased regulation in teacher certification include the nongovernmental National Commission on Teaching and America's Future, the National Council for Accreditation of Teacher Education, the two national teacher unions, the National Education Association and the American Federation of Teachers, as well as a constellation of major philanthropic foundations, professional associations of administrators and teachers, and associations of university-based schools of education. As a group they tend to favor the following:

- Mandatory accreditation of education schools by the National Council for the Accreditation of Teacher Education.
- Teachers' exerting greater control over the profession through professional standards boards that are empowered to set state-level licensing and certification policies.
- Higher requirements for formal education and student teaching, leading to most teacher preparation occurring at the post-baccalaureate level.
- Limiting teaching assignments to the subject(s) in which teachers majored while in college.
- Licensing of teachers based on tests of their subject-matter knowledge and of teaching skills.
- Ending practices, such as *emergency*, *temporary*, and some forms of *alternative* certification, that place teachers in classrooms with little pre-service training in pedagogical methods.
- Creation of "professional development schools" where student teachers would perform internships lasting at least a year rather than the typical semester of student teaching.
- Certification of "master" teachers via the National Board for Professional Teaching Standards.

4.12.3 Supporters in this camp view teaching as a profession with a strong research base of effective teaching practices that ought to be conveyed through an intensive, university-based training program before candidates begin teaching full time. They are trying to model teacher training and certification after the path followed by the legal and medical professions, where the profession itself attempted to raise standards by taking responsibility for licensing practitioners. The creation of the National Board for Professional Teaching Standards; the expanded influence of the National Council for Accreditation of Teacher Education; the issuing of major policy recommendations by the

National Commission on Teaching and America's Future; and the development of licensure standards by the Interstate New Teacher Assessment and Support Consortium (known as INTASC) are all the result of nearly two decades of attempts to increase the overall quality, status, and influence of the teaching profession in the United States (Carnegie Task Force on Teaching as a Profession, 1986).

4.12.4 The general trend in the United States has been to embrace key elements of this movement. Most states now either require teacher training institutions to earn accreditation from the National Council for Accreditation of Teacher Education (NCATE) or have adopted NCATE's standards for state approval of teacher education programs. A majority of teacher training institutions are now NCATE-accredited or are currently seeking accreditation. Most states have created professional standards boards, composed mainly of practicing teachers and their representatives, that advise state education agencies on certification policies and, in some cases, actually determine and implement policies. Most states also recognize certification from the National Board for Professional Teaching Standards as an advanced certificate, and offer teachers substantial financial incentives to pursue certification. Moreover, there has been a significant move toward the training of teachers at the post-baccalaureate level, with many universities creating joint bachelor's-master's programs by adding a fifth year to the regular bachelor's degree for those who desire to become certified to teach (Turner, 1998).

4.12.5 At the same time, the steady progress of the movement has been challenged by the growth of a movement sponsored by those who wish to lower barriers to the teaching profession by enabling candidates to apply for teaching positions without first earning a degree in education or receiving substantial training. Supporters of this process, termed "competitive certification," tend to view pedagogical training as an unnecessary barrier to the teaching profession that dissuades bright candidates from entering the profession. A major policy manifesto released by the Thomas B. Fordham Foundation, a Washington, D.C.-based education research and policy advocacy organization, and signed by a former secretary of education and several leading state officials, argues, "Every additional requirement for prospective teachers—every additional pedagogical course, every new hoop or hurdle—will have a predictable and inexorable effect: it will limit the potential supply of teachers by narrowing the pipeline while having no bearing whatever on the quality or effectiveness of those in the pipeline…. A better solution to the teacher quality problem is to simplify the entry and hiring process." (Kanstoroom, et al., 1999).

4.12.6 Overall, those supporting competitive certification tend to favor the following:

- Evaluating potential teachers through written tests of their knowledge of subject matter and pedagogical techniques.
- Making traditional teacher preparation a voluntary path to the teaching profession, not one that is mandated by state certification policies.
- Granting school principals and administrators more flexibility in hiring teachers, and, depending in part on their professional judgment, to ensure that only high-caliber candidates are entering the profession.
- Focusing on students' learning gains as the measure of a teacher's performance, and making results from standardized tests a component of salary and licensing decisions for teachers.
- Emphasizing teachers' knowledge of subject matter and general intellect over education coursework requirements.
- Expanding alternative routes to licensure.

4.12.6 The movement for competitive certification has led to the formation of the American Board for Certification of Teacher Excellence, a private organization that is developing an alternate route to licensure. Started in fall 2001, with a $5 million grant from the U.S. Department of Education, it offers initial "Passport Certification" to teaching candidates who hold a bachelor's degree, demonstrate mastery of their subject matter, and pass a test of professional knowledge. The goal is to maintain high standards through examinations of candidates' knowledge of their subject matter and of pedagogical principles, while lowering barriers to the teaching profession by not requiring candidates to attend a traditional teacher preparation program.

4.12.7 The American Board recently received a $35 million, multiyear grant from the U.S. Department of Education. U.S. Secretary of Education Rod Paige has expressed support for the goals of the project, saying "[The American Board] focuses on what teachers need to know and be able to do in order to be effective, instead of the number of credits or courses they've taken. It demands excellence rather than exercises in filling bureaucratic requirements" (Paige, 2003).

4.13 Conclusion

4.13.1 In the foreseeable future, it appears that reforms of teacher certification in the United States will develop along parallel tracks. State and federal governments are making substantial investments in bolstering the quality of university-based teacher training programs and of the standards for teacher licensure. Meanwhile, they are also developing alternate routes to the teaching profession in order to attract more mid-career professionals and talented undergraduates. It is too soon to know what this will mean for the future of teacher training institutions and the teaching profession in the United States.

Chapter Five
RECRUITING, HIRING AND ASSIGNING TEACHERS

5.1 Introduction

5.1.1 In the United States, the recruitment, hiring, and assignment of public school teachers is the responsibility of local school districts. Across the nation, teachers are recruited through a variety of means, yet some districts are able to recruit more extensively, and more effectively, than others. At a national level, *No Child Left Behind* has placed additional emphasis on the need to recruit teachers who are qualified according to standards set forth in the law, and as states adjust their requirements to the federal legislation, new challenges and solutions will undoubtedly emerge. This chapter provides an outline of current policy concerns, presents recent data and trends on the hiring and placement of teachers, and ends with a discussion of some of the approaches states have used to recruit teachers. Remaining as an underlying theme in this chapter is the difficulty of maintaining a fluid national discussion on an issue that is decidedly local.

5.2 Current Policy Concerns

5.2.1 School districts often find themselves competing with one another to hire the best teaching candidates, and some districts retain distinct advantages over others. School districts located in attractive communities are generally able to offer higher salaries and better working conditions than districts in communities that serve higher numbers of disadvantaged children, of whom a high proportion are often minorities. Teachers who work in more affluent districts enjoy higher salaries, smaller class sizes, newer and better materials, and greater influence over school decisions (U.S. Department of Education, 1997).

5.2.2 In addition to funding disparities prevalent among urban, rural and suburban school districts, a number of other barriers make the task of recruiting teachers more difficult in urban and rural school districts. Safety issues and the high cost of living in cities can make these urban areas less desirable places to live. Teachers who contemplate working in inner city schools generally choose to live outside the neighborhood of the school, in safe but affordable areas, but they are then faced with longer commutes. The recruitment efforts for rural school districts are hindered by the more limited cultural and social opportunities that make them less appealing to young professionals. For example, two-thirds of the college graduates from North Dakota, one of the most rural states, leave the state to seek employment elsewhere (Harman, 2003). In contrast, suburban areas generally offer safe, affordable housing but are still near to the major urban centers that young professionals tend to find desirable.

5.2.3 The highly local nature of the labor market in teaching exacerbates the difficulties of recruiting teachers into urban and rural environments. Teachers are likely to complete certification in the state in which they are trained and, in general, tend to seek a job in a school near where they grew up or attended college (Boyd et al., 2003). One recent study concludes: “While teachers who grew up in cities often are inclined to teach in their hometowns, the number of urban recruits falls short of the number needed, requiring urban districts to seek teachers from elsewhere. If urban districts cannot offer compensating incentives, urban recruits are likely to be less qualified overall than those who teach in suburbs.”(Darling-Hammond and Sykes, 2003).

5.2.4 Research has found that the demographics of a school's student population also play an important role in where teachers choose to teach. On average, teachers (most of whom are white), prefer to work in schools with large concentrations of relatively high-income, low-minority, high-achieving students, where there tend to be fewer disciplinary problems and more parental support (Betts et al., 2000). A recent study of nearly 400,000 teachers in Texas found that when white teachers left schools characterized by high-minority, high-poverty and low-achieving student populations, they transferred to schools with fewer minorities, lower poverty and higher student achievement levels (Hanushek et al., 2004).

5.2.5 School districts that lack competitive advantages are more apt to compromise their own local and state policies governing teacher quality. They seek a higher number of waivers from the state in order to hire teachers who only hold emergency licenses. They report a disproportionate number of teachers working "out of field," meaning more of their teachers lack a college major or minor in the subject they are teaching. In high-poverty middle schools, where the problem of out-of-field teaching is most pronounced, 53 percent of all classes are led by teachers who do not hold a college major or minor in the subject, compared with 38 percent of classes in low-poverty schools.[6] These districts also hire more teachers who have had poorer academic performance, as measured by their performance on college admissions and teacher licensing exams (Lankford et al., 2002).

5.2.6 The lack of a competitive advantage is aggravated by the fact that these school districts have to replace a greater percentage of their teachers each year. In schools with high percentages of minorities, one out of five teachers has been teaching for fewer than three years compared to only one out of 10 teachers in schools with low percentages of minorities (U.S. Department of Education, 2000b).

5.2.7 While working conditions, salary levels, and living environments are powerful influences on teachers' employment decisions, the recruitment and hiring practices of urban school districts compound the problem. Job offers are made consistently later in the hiring cycle in urban schools than in surrounding school districts (Levin and Quinn, 2003). Large districts know that they are likely to have hundreds of vacancies to fill for the coming year so they offer "open contracts." Open contracts represent a promise of employment with the district, but the candidate is not told the specific school assignment; this practice is not conducive to helping a teacher feel comfortable making a commitment to a school district. In contrast, suburban school districts are more often able to offer a specific position in a specific school, enabling new teachers to learn where they will be working well in advance of the start of the school year.

5.2.8 While many of the factors impacting recruitment are outside the control of school districts, they do not always choose to hire the most qualified candidates who are available. Factors such as patronage (the hiring of family, friends, or professional

[6] In this study (see Jerald, 2003), a "high-poverty" school is defined as "one where 50% or more of the students qualify for the federal free and reduced price lunch and a low-poverty school is one where 15% or fewer did so." This study labeled a teacher as "out-of-field" if she did not have a college major or minor. This is more generous than the NCLB definition of a "highly-qualified teacher" as one with a college major in the subject being taught.

associates), a desire to restrain costs by hiring candidates with less experience, and the need to find teachers who can serve dual roles (such as coaching a sports team) can all override the search for the most-qualified candidate (Darling-Hammond and Sykes, 2003).

5.2.9 Race and gender are also factors. School districts actively seek to hire minority and male teachers in order to achieve greater diversity and to provide role models for children. This goal is an especially high priority for urban districts that enroll high numbers of minority children who often do not have a father living at home (U.S. Census Bureau, 2003).

5.2.10 Although the practice is subject to strong criticism, urban districts frequently assign their new teachers to schools with the toughest working environments. This practice extends from the district's teaching contract negotiated with the local teacher union; it usually allows a teacher who has seniority to transfer to another school that has posted a vacancy. Not surprisingly, more senior teachers choose to transfer to those schools with the more favorable working conditions. This dynamic not only leaves low-achieving students with the least-experienced teachers, but also provides new teachers in high-poverty schools with fewer experienced teachers to lean on for support as they learn their craft (Ng, 2003).

5.3 Data, Trends and Factors

5.3.1 Accurate data on the number and types of vacancies from each of the approximately 15,000 school districts in the United States would be difficult, if not impossible, to obtain. In an attempt to gain general information on this topic, a survey prepared by the National Center for Education Statistics does ask individual *schools* to rate the difficulty of filling vacancies. A small proportion of schools reported that they had vacancies that were difficult or impossible to fill (U.S. Department of Education, 1996a). A larger percentage, approximately one-fifth, reported that they offered teachers additional training to be able to teach in areas of current or anticipated shortages. Analyses of data from 1990-91 indicated a significant amount of teaching out of field, which may be a result of teacher shortages in specific training fields (U.S. Department of Education, 1996a). More recent data from 1999-2000 show that out-of-field teaching remains a problem independent of teacher supply. However, shortages can be especially pronounced in certain subjects, notably science sub-fields and English as a second language or bilingual education, primarily at the middle school level (U.S. Department of Education, 2002f).

5.3.2 The data collected by National Center for Education Statistics in 1993-94 show that central city schools had a more difficult time filling vacancies than schools located near city limits (suburbs) or in large towns. Schools with minority enrollments of over 20 percent also experienced more difficulty in filling vacancies in every category. Generally, teaching positions in special education, the sciences and English as a second language or bilingual education were harder to fill than positions in English and general primary education (U.S. Department of Education, 1996a).

5.4 Determining Teacher Vacancies

5.4.1 In public schools, vacancies are officially posted at the district level, though many schools in a district act on their own behalf, advertising and filling teaching positions.

The only role that the state plays in teacher recruitment and hiring is to determine if a candidate has earned a valid teaching license or to inform a candidate of the necessary qualifications to become fully licensed.

5.4.2 Multiple variables determine how efficient school districts are at filling vacancies. Vacancy notification practices, changes in student enrollment, expanding or shrinking education budgets, and teacher transfer policies all play a role. The various deadlines by which teachers must declare their intention to resign from a school district has a particularly negative effect on recruitment efforts. As spelled out in the teacher contract, teachers intending to resign are asked to make a formal declaration of their intent by a certain date, usually sometime in the late spring. These deadlines are notably later on average in many urban districts and are also weakly enforced. By the time that urban districts have declared an official vacancy, more competitive districts may have offered contracts to the best-qualified candidates. Some district policies also discourage teachers from providing sufficient notice. Policies that terminate a teacher's health benefits as soon as the school year is over or deny summer employment opportunities to a teacher who has declared an intention to resign can dissuade the teacher from providing timely notification (Levin and Quinn, 2003).

5.4.3 Attempts to identify specific vacancies are further complicated in many large urban school districts by a highly mobile population of students. Although the U.S. population in general is relatively mobile, with residents who are able to move to another neighborhood or to another state to pursue job opportunities, more affordable housing, and so on, children living in poverty are more likely to change from one school to another than their more affluent peers (Kerbow, 1996). In addition, due to other factors like trends in immigration, population growth in the United States is not forecasted very accurately at the local level, leading to unexpected surges and drops in enrollment in some areas. These unpredictable fluctuations in student populations make assessing staffing needs particularly difficult.

5.4.4 Both the annual state and district budget processes can delay a district's authority to proceed with hires. Without an approved budget, districts are reluctant to offer personnel contracts. Collective bargaining agreements between teacher unions and the district have an impact as well. These agreements allow teachers who wish to leave their schools or whose positions might have been eliminated the right to transfer within the district to one of the new vacancies. Only once transfers are completed within the district—a process that can begin in the spring and sometimes, depending on the district, last through the summer—can new hires from outside the district be considered (Levin and Quinn, 2003).

5.4.5 All of these factors result in delayed hiring decisions. One four-state study found that a third of all new teachers were hired after the school year had already started (Liu, 2003). Even those applicants who are committed to teaching in a high-poverty school district can become discouraged by the long wait and take jobs in another district. More troubling, it appears that the best candidates are the first to look elsewhere. One study found that those candidates most likely to withdraw from the process tend to have higher undergraduate grade-point averages, a higher likelihood of possessing a degree in their field, and more extensive pedagogical training (Levin and Quinn, 2003).

5.4.6 The process for hiring teachers in private schools more typically starts at the beginning of the calendar year. Private schools independently establish their own budgets and enrollments, so they are not subjected to the uncertainties about operating funds and

staffing needs that public school districts face (Ballou and Podgursky, 1998). Private schools also have the option of limiting their enrollment, thus making staffing more predictable. Public schools cannot turn away students who are eligible for enrollment without explicit permission of the district.

5.5 Inviting Applications and Selecting Candidates

5.5.1 Schools and districts generally recruit teachers from teacher preparation programs, including four-year undergraduate and post-baccalaureate teacher programs. For large suburban or even urban districts, school district officials commonly travel to a college or university campus to recruit prospective teachers. However, the majority of small districts do not have the funds to do this type of recruiting. Many states do not prepare enough teachers through their approved preparation programs to meet the staffing needs of the state's schools. States such as Connecticut, Minnesota, New York, Pennsylvania, and Wisconsin have historically produced more teachers than they employ (Said, 1999). Others, such as California, Florida, Nevada, and Texas, require more teachers than they produce. Consequently, many school districts in these states routinely travel outside the state and in some cases outside the country to recruit a sufficient number of candidates (Said, 1999).

5.5.2 School districts also look to alternative certification programs to provide new sources of teachers. These programs are often managed by independent entities that have a contract with the school district to recruit, interview, and screen candidates for a particular school. The school district personnel office may be responsible only for granting the final approval of these candidates and determining their particular school assignment.

5.5.3 One feature of looking to alternative certification programs as a source of teachers is that the state plays a more significant role in deciding if such a candidate can be hired. State licensing officials review the college transcripts of alternative certification candidates to determine if the candidate has met all of the coursework requirements of the state. The state may decide that the district cannot hire a candidate or the candidate may have to agree to enroll in coursework concurrent with teaching, in order to fulfill state requirements.

5.5.4 Private schools, particularly the more elite members of the National Association of Independent Schools, tend to rely on private-sector teacher recruitment agencies to prescreen candidates and to match potential candidates to open positions. Private religious schools may do significant hiring through word of mouth and by targeting students at religious universities and high schools at an early age. Typically, private schools are less interested in hiring candidates who have completed a formal teacher preparation program. Often, private schools seek liberal arts majors who have graduated from the more selective U.S. colleges (Ballou and Podgursky, 1997).

5.5.5 Many school districts enjoy ongoing relationships with nearby teacher training institutions. By offering to host teacher trainees who need to fulfill their student teaching experience, schools can identify potentially good hires. One study found that about 20 percent of new hires served as student teachers, teacher aides or paraprofessionals in the district prior to their current position (Liu, 2003). Another recruiting tool is the job fair, a central location, where interested candidates are screened, interviewed and often hired on the same day.

5.5.6 School districts can take one of two approaches to recruitment and hiring: centralized and decentralized. A centralized approach leaves much of the responsibility for hiring with the district's personnel department. A decentralized approach distributes the responsibility to individual schools, giving principals more authority for recruiting, interviewing, and selecting teachers. Often, a district's hiring process involves aspects of both, but decentralized school-centered hiring processes have become increasingly common. In a decentralized hiring process, a candidate will interview at a specific school, rather than with a personnel official located at the school district headquarters. A candidate's familiarity with the particular culture of a school may increase the likelihood that the teacher will remain in the school for a significant period of time (Liu, 2003).

5.5.7 When a candidate applies to a school district or an individual school, she or he must submit her or his credentials, including district application forms, resume, academic transcript, references, and in some districts, a professional portfolio which displays evidence of the candidate's training. Most importantly, all districts require proof that a candidate is licensed to teach. A license generally indicates that a teacher has taken the college coursework that the state requires, and has passed a criminal background check, and, in most states, a state test (more information is provided in Chapter 4).

5.5.8 School districts and schools usually do not require applicants to furnish their scores from a standardized test or produce a writing sample. They also do not ask the candidate to demonstrate his or her instructional skills, e.g., by asking them to produce a sample lesson plan (Anthony and Roe, 2000). Applicants are not generally asked to teach a sample lesson or to observe classes. In a four-state study of teacher hiring process in public schools, only 8 percent of applicants were asked to teach a sample lesson. A candidate usually has an interview with the school principal but is less likely to be asked to interview with senior staff at the school (Liu, 2003).

5.6 Terms of Employment

5.6.1 Typically, a new teacher is given a fixed-term contract without any job protection. Initial teacher contracts generally impose a probationary period, usually lasting three years, during which time a teacher can be dismissed without due process and without the right to appeal. Dismissals of probationary teachers still appear to be rare. Recent national data indicate the typical public school district dismissed fewer than 1 percent of teachers with three or fewer years of experience (typically untenured) (U.S. Department of Education, 2000b).

5.6.2 Once the probationary period is completed, the school administrator formally recommends a teacher for tenure. Tenure is designed to protect teachers from arbitrary dismissal but it is also a source of some controversy in the United States. While it provides teachers with job security, it also makes the process of dismissing a teacher time consuming (one to two years on average) and burdensome, such that many administrators will complain that it is too much trouble. Dismissals of tenured teachers are extremely rare. Analysis of government data from 1999-2000 indicates that only 0.3 percent of public school teachers with more than three years of experience (typically tenured) are dismissed annually (Podgursky, 2003a).

5.6.3 Private school teachers are much less likely to be covered by tenure protections offered under contracts between teacher unions and school districts. While 80 percent of public

school teachers are members of a teacher union, only 12 percent of private school teachers are union members.

5.7 Policy Initiatives and Impact

5.7.1 At all levels of school governance, there are efforts to alleviate the competitive disadvantages faced by school districts serving poor children, particularly urban districts. In exchange for teaching in a high-poverty school, the federal government offers several programs that forgive a teachers higher education loan. One such option, the Stafford Loan Forgiveness Program, allows teachers who serve for at least five years in a school designated as low-income to receive credit of up to $5,000 on their outstanding student loans. Some school districts located in cities with a high cost of living provide housing subsidies to teachers (Jenes, 2002).

5.7.2 Recently, private organizations have begun to provide personnel services to public school districts. Examples include the New Teacher Project, described in section 4.9.9, and Project RISE (Resources for Indispensable Schools and Educators), which is a new organization that pairs well-run high-poverty schools with proven, effective teachers who are committed to teaching poor children. The organization has enlisted 27 school clients in cities ranging from Chicago to San Francisco (Project Rise, 2004). Another organization, Recruiting New Teachers, Inc., runs a clearinghouse on recruiting strategies and provides technical assistance to states and districts (Recruiting New Teachers, Inc., 2004).

5.7.3 For-profit ventures have also noticed public school districts' personnel needs. Sylvan Education Solutions is an outgrowth of a private company that provides after-school tutoring to students in grades K-12. Sylvan now offers to assist districts with finding and coaching candidates to meet certification requirements (Sylvan Education Solutions, 2003). Another for-profit group, Teachers-Teachers.com, has developed an online recruiting tool that can be accessed by teachers seeking jobs as well as by districts needing to fill positions.

5.7.4 Besides the use of financial incentives and the rise of human resource consulting groups, many school districts and education reform groups are endeavoring to change practices that impair the timely and competitive recruitment of high-quality candidates. Practices that allow teachers to delay their decision to resign until quite late in the hiring cycle and that give the unrestricted right to teachers with seniority to transfer to other schools are being challenged by some school districts. A handful of districts, including Seattle, Washington and Minneapolis and St. Paul, Minnesota, have implemented limitations on seniority transfers; other districts, such as Boston and Los Angeles, are considering them (Archer, 2000).

5.8 Conclusion

5.8.1 Recruiting and retaining quality teachers is a priority concern of the *No Child Left Behind* education reform, and remains high on the agenda in all education policy discussions across the United States. With the onset of greater accountability and strict adherence to state standards for quality assurance, methods of preparing and retaining teachers are under increased examination at both the state and national levels. Eliminating the achievement gap between advantaged and disadvantaged youths in the United States requires focused attention on those schools, typically in urban and rural areas of high

poverty, that have the most trouble attracting quality teachers and attaining high levels of student achievement. It can be assumed that the policy debate will continue as the number of alternative certification programs increases, and as teacher training institutions work to adapt their policies and strategies. With increased access to data and information on teacher performance, policy-makers are poised to track all preparation programs with greater rigor and make more informed policy decisions on the most effective methods of teacher preparation in the United States.

Chapter Six
RETAINING EFFECTIVE TEACHERS IN SCHOOLS

6.1 Introduction

6.1.1 The retention of teachers is a complex goal, and one that requires school administrators to balance a variety of concerns. While it is difficult to generalize across the United States, many states and school districts face similar challenges when trying to retain effective teachers. The debate on national policy is broadly framed in the first section of this chapter, followed by a more detailed discussion of the rates at which teachers have left the profession. The remainder of the chapter examines local policy effects on retention rates and concludes with a review of some potential strategies and solutions.

6.2 Current Policy Concerns

6.2.1 Nationwide data on teacher attrition (the measure of how many teachers leave the profession), teacher mobility (the measure of how many teachers move from one school to another), and teacher turnover (the sum of attrition and mobility) reveal that three categories of teachers are more likely to leave the profession early or change schools. These categories include the following:

- ***The most academically qualified teachers***: Some research suggests that teachers who perform well on college entrance exams and attend highly selective undergraduate institutions are more likely to leave the profession early in their careers (U.S. Department of Education, 2003b) and significantly less likely to return to teaching later in their careers (Murnane et al., 1991).

- ***Teachers in hard-to-staff areas***: Teachers who work in schools with high concentrations of disadvantaged children, those children who may be in most need of the opportunities that schooling provides, exhibit higher rates of turnover (Whitener et al., 1997; Hanushek, 2003). For example, at the highest-poverty elementary schools in the city of Philadelphia, less than half of the original 1999-2000 staff was still teaching in these schools three years later.

- ***Young and inexperienced teachers***: Young teachers (under 30) and inexperienced teachers (less than five years of experience) leave the profession at elevated rates (U.S. Department of Education, 2003b).

6.2.2 In a recent survey, 400 teachers, each of whom had been recognized by their respective states as "State Teacher of the Year," were asked what changes were needed to reduce turnover rates. High percentages cited a "great need" to create a more supportive environment in which experienced teachers are offered a wider range of opportunities for career advancement (57 percent), better pay scales (82 percent), and more active roles in decision-making (73 percent), and in which new teachers are given the administrative support (89 percent) and formal mentoring (80 percent) they need to improve (Goldberg and Proctor, 2000). Policy-makers are challenged to consider how to create such an environment in schools in order to better compete in an increasingly diverse and competitive labor market (Johnson, 2000; Temin, 2002). States and school districts are experimenting with a variety of strategies to improve teacher retention, including the following:

- Opportunities to earn advanced certification that recognize teachers with superior skills.
- "Differential" pay structures that give some teachers higher pay (e.g., for agreeing to teach in high-poverty schools or for teaching in a hard-to-staff subject area).
- Merit pay structures that provide higher pay to teachers who produce higher student achievement gains than average.
- Mentoring programs aimed at reducing the frustration and anxiety experienced by new teachers.

6.3 Data, Trends and Factors

Rates of Attrition and Turnover

6.3.1 A variety of studies on teacher attrition and turnover have found that young teachers tend to leave the profession or to change schools at a higher rate than older teachers. Research examining the reasons for high attrition has been inconclusive, although some predict that teachers who teach certain subjects, such as special education, or face an ethnically diverse school environment may leave at a higher rate than others. Further, some suggest that teachers of high academic ability are more likely to leave the profession than those who perform in the bottom quartile of their college entrance exams.

6.3.2 In a pattern similar to that found in teachers who leave the profession altogether, younger teachers are also more likely to change schools than older teachers. Excluding the category of teachers who retire, the highest rates of turnover are reported for young teachers. For private school teachers under the age of 25, the turnover rate in 2000-01 was 20.5 percentage points above the average for all private school teachers. For public school teachers ages 25 to 29, the turnover rate in 2000-01 was 10.8 percentage points above the average for all public school teachers (U.S. Department of Education, 2004).

6.3.3 Inexperienced teachers also have extremely high rates of turnover. For private school teachers with two years of experience, the turnover rate in 1995 was 10.5 percentage points above the average for all private school teachers. For public school teachers with two years of experience, the turnover rate in 1995 was 9.9 percentage points above the average for all public school teachers.

6.3.4 A study in Texas found that teachers with zero to two years of experience were almost twice as likely as more experienced teachers (11-30 years of experience) to exit the Texas public schools and almost four times as likely to switch school districts (Hanushek, 2003). As large portions of the teaching force are now near retirement, more young and inexperienced teachers will need to be hired to fill these pending vacancies. This trend is not necessarily out of character for professional fields as a whole; researchers disagree on whether attrition rates for new teachers are significantly higher than for recent graduates in other professional fields (Ingersoll, 2000; Henke and Zahn, 2001).

6.3.5 Limited evidence indicates that a significantly higher proportion of private school teachers leave teaching altogether in a given year than do public school teachers. In 1994, just under 12 percent of private school teachers left teaching as compared to nearly 7 percent of public school teachers (U.S. Department of Education, 2003b). This difference may be explained in part by the fact that the private school teaching force consists of younger teachers (U.S. Department of Education, 2003b) who, data indicate, are more

likely to leave the profession within the first few years. Eleven percent of teachers were reported to leave smaller schools (less than 150 students), compared to 6 percent who left larger schools (more than 750 students) (U.S Department of Education, 2003b).

6.3.6 There has been little conclusive research on the relative attrition rates for teachers of different subject areas. It appears that the attrition rate for special education teachers is consistently higher than for other subject areas, but relative trends in attrition rates from other subject areas are less clear. The high attrition rate for special education teachers is problematic since these vacancies are often cited as the most difficult to fill. A recent survey of over 8,000 teachers and special education service providers indicated that a smaller percentage of special education teachers serving emotionally disturbed students (58.5 percent) and learning disabled students (62.9 percent) intended to stay in their profession until retirement than general education teachers (74.0 percent) (Westat, 2002).

6.3.7 High attrition rates may be mitigated by a significant number of teachers who return to teaching after having left previously. Although the exact rate at which teachers re-enter teaching is not clear, findings consistently indicate that a significant number of teachers return. For instance, a study in Tennessee found that nearly half of the newly hired teachers in 1999 had previously taught (Cornett, 2001). One nationwide study conducted in the mid-1980s indicated that eight out of every 10 newly hired teachers in the United States had either taught previously or had been licensed a number of years earlier and were entering teaching for the first time (National Education Association, 1987). It is unclear, however, exactly who classifies as a "new teacher" or as "reentering" the profession. These data could indicate that many teachers reenter after leaving the profession altogether, or may include teachers who transfer into new districts or states. Another study using nationwide data found that approximately one out of every four teachers who left teaching eventually reentered the profession (Murnane et al., 1991).

6.3.8 Among college graduates in 1992–93 who became public school teachers, 84 percent of those teachers who scored in the bottom quartile on their college entrance exams were still teaching five years later. In contrast, only 68 percent who scored in the top quartile on their college entrance exams were still teaching after five years (U.S. Department of Education, 2003b). The disproportionate departure of academically able teachers is salient because a consistent body of research shows that teachers' verbal ability, a measure of teachers' general academic ability, has more of an impact on student achievement than any other measurable teacher attribute (Whitehurst, 2002, citing Greenwald et al. 1996; Ferguson and Ladd, 1996; Kain and Singleton, 1996; Ehrenberg and Brewer, 1994).

6.3.9 A recent study of nearly 400,000 teachers in the state of Texas found that teachers who choose to change districts are more likely to take a job where there are fewer minorities, lower poverty rates and higher student achievement. On average, teachers tended to transfer to districts that had 2 percent fewer African-American students, 4.4 percent fewer Hispanic students, 6 percent fewer low-income students and a slightly higher average student test scores (Hanushek, Kain and Rivkin, 2002). Higher salaries seemed to be less of a factor in teachers' decisions to leave, as teachers changing districts earned on average only 0.4 percent more in their new districts. Such data further support the notion that schools with poor, minority, and low-achieving students are faced with the greatest teacher retention challenges.

6.3.10 In a survey of both public and private school teachers who chose to leave the profession in 1994-95, 5 percent cited their primary reason as being "dissatisfied with teaching as a career." Some of the reasons cited include dissatisfaction with student discipline and motivation, and inadequate support from school administration (including poor opportunity for advancement and lack of recognition) (Whitener et al., 1997).

6.3.11 School districts provide training and mentoring programs designed to improve teaching skills and reduce early attrition. These programs are also referred to as "induction" programs for novice teachers and vary widely in both scope and cost. Traditionally, this assistance has been in the form of in-school mentorships, where veteran teachers are offered small stipends to serve as mentors to new teachers in the same school building. Recent studies have shown that more effective induction programs include training, guidance and compensation for mentors, required time for structured interaction between a new teacher and a mentor teacher, and orientation and training programs for first-year teachers before the school year begins (Gold, 1996). For instance, a program in rural Louisiana reduced annual new teacher attrition rates by nearly 40 percent by providing a training program on classroom management in the summer before employment, assigning an experienced teacher to support each new teacher within his or her school, and holding monthly meetings that specifically address new teachers' concerns (Archer, 2003).

6.3.12 Many states now provide funding assistance to school districts with high enrollments of students in poverty and high teacher attrition. The state of Maryland hired veteran teachers, often retired, to mentor a dozen new teachers by visiting their classrooms on a bimonthly basis. The American Board for Certification of Teacher Excellence, a non-government agency promoting a new alternative route to full certification, recently announced its intention to initiate an online mentoring program for new teachers certified under its auspices. These online mentorships pair the new teacher with credentialed veteran teachers who may be located anywhere in the country (Blair, 2003). Theoretically, the online model could more closely match the needs of a new teacher by selecting the mentor from a much-expanded pool of veteran teachers and give the mentoring pair more flexibility about when to meet to discuss teaching issues. Possible drawbacks may include the inability for the mentor and new teacher to observe each other teach, though the program does intend to include videotaped lessons.

6.3.13 Where, then, do departing teachers go? Data indicate that among teachers leaving the profession, a higher proportion of public school teachers than private school teachers tend to stay in education but in a non-teaching role (21 and 12 percent, respectively). Private school teachers, on the other hand, are much more likely than public school teachers to leave the education profession altogether (34 and 20 percent, respectively) (Whitener et al., 1997). This difference may be the result of the fact that more private school teachers do not have degrees in education and are able to more easily join the workforce in a different job field. Further, large public school districts are able to offer a greater number of non-teaching job opportunities to former teachers both in schools and in various positions in the school district headquarters, usually for higher pay. Teachers in private schools do not often have this option.

6.3.14 The salary disparity between public and private school teachers may also account for the migration of teachers to public schools. When public school teachers change schools they remain in public schools. When private school teachers change schools, about half accept positions in public schools (Whitener et al., 1997).

Teacher Absenteeism

6.3.15 Nationwide teacher surveys have found that teachers in schools with high rates of poverty are significantly more likely to consider teacher absenteeism a problem in their school than are teachers in low-poverty schools (22 percent and 10 percent, respectively) (Park, 2003). Still other studies indicate that teachers in urban schools, whether or not they serve high- or low-poverty populations, are more likely to identify absenteeism as a problem (Lippman et al., 1996).

Leaves of Absence

6.3.16 The nature of leave available to public school teachers varies by school district, depending on the provisions of the teacher contracts. Generally, leave comes in two forms: temporary and extended. Within both of these broad categories, there are several subcategories. One of the most common types of temporary leave is sick leave, which sets a limit on the number of days teachers may take off during the course of the school year and still receive pay. Most contracts do not include a special provision for stress leave, but teachers are generally allowed to use their allotted sick days without having to document precisely why the leave was taken. Maternity leave is often taken as a combination of sick and annual paid vacation leave. Other types of temporary leave, such as paid vacation leave, can be used for professional development or other non-health related obligations (for example, appearing in a legal proceeding). In all cases of temporary leave, a teacher is paid full salary provided he or she does not exceed the maximum number of days.

6.3.17 Most school districts correspond teacher pay to the school year, as opposed to the calendar year, such that teachers are not obligated, nor paid, to work during the summer months. A typical teacher's contract in most school districts (93 percent) covers only 9 to 10 months out of the year (U.S. Department of Education, 1996).

6.3.18 Many teachers unions provide a service called a "sick leave bank." Each member is asked to contribute one sick day each year to the sick leave bank. A teacher who is faced with a long-term illness may be able to use paid sick days from this bank to avoid losing any pay.

6.3.19 The second type of leave, extended leave, is granted in special cases for a period of up to one year for extended study, volunteer service, or military service. Generally, such leave is unpaid. However, extended leave guarantees that teachers can return to the positions they left and that typically, a teacher's time away is counted towards a pay-scale increase. Generally teachers maintain all benefits while on extended leave (Lieberman, 2000).

6.3.20 Another form of extended leave is known as a "sabbatical". Teachers must apply to the school district for permission to take a sabbatical, which often extends for as much as six months to one year and is typically used to pursue professional development opportunities. Although district policies vary, teachers applying for a sabbatical are generally required to have more than five years of experience and must agree to remain in a specific district for a certain amount of time after returning. If accepted, teachers are usually paid approximately half of their normal salary. So as to prevent shortages, most districts have rules about the percentage of teachers allowed to be on sabbatical at one time. In the United States, it is rare for teachers to seek periods of leave to work in other areas of education or occupations outside of teaching. More commonly, teachers who

wish to avail themselves of such opportunities must formally resign from their teaching position.

Evaluation of Teachers

6.3.21 Virtually all public schools and the vast majority of private schools require that supervisors formally evaluate teachers (Ingersoll, 2003). The exact nature of the evaluation varies depending on school and district policy. In the case of public schools, the terms of the contract between the teacher unions and the school district (known as the collective bargaining agreement) may prescribe the evaluation process. School principals are predominantly in charge of carrying out evaluations of teachers. To a much lesser extent, school boards, districts, and other faculty members may also evaluate teachers. In public schools, the frequency of evaluations varies by district, but generally, non-tenured teachers are evaluated more often than tenured teachers. In a survey of public elementary teachers in 1993, 81 percent of probationary or temporary teachers reported having received a formal evaluation that year, compared with 68 percent of tenured teachers (Nolin et al., 1994).

6.3.22 Ninety-two percent of teachers reported that their most recent evaluation included a classroom observation that received a formal rating (Nolin et al., 1994). Generally, the observation consists of evaluators grading teachers using some form of standardized checklist that outlines the characteristics of what they or the district deem to be traits of a successful teacher. The observation is then factored in with other considerations, such as hours of professional development and contributions to the school, to create a final evaluation. In public schools, teachers who receive poor evaluations are generally required to participate in professional development or to submit to more frequent evaluations. Formal evaluations are usually kept in a teacher's permanent record and poor results might adversely affect teachers trying to transfer to other schools.

6.3.23 In the United States, it is relatively rare for a public school teacher, tenured or untenured, to be dismissed from teaching; accordingly, evaluations are rarely used as tools for dismissal. Eighty-one percent of public school teachers did not perceive discharging incompetent teachers as an objective of teacher evaluations (Nolin et al., 1994). Similarly, teacher evaluations have generally not been linked to pay increases. However, as states and school districts begin to place more importance on results, a number of school districts have been experimenting with strategies that tie teacher pay to positive evaluations.

6.3.24 Evaluations are traditionally the purview of the district, not the state. States have shown some reluctance to require evaluations. Only two states currently *require* teacher evaluations to be tied to student achievement (Quality Counts, 2003a). A 1996 survey found that only 12 percent of public school teachers reported that students' standardized test scores were used to evaluate their performance (Ingersoll, 2003).

6.3.25 One evaluation model that has received a great deal of attention is a groundbreaking statistical methodology known as the Tennessee Value-Added Assessment System (TVAAS). TVAAS estimates the aggregated yearly growth in student learning in a manner that is considered fair and objective. The idea is to measure the amount of "value" that a teacher consistently adds to his/her students by comparing student achievement gains produced by a particular teacher with a normative sample. For example, if the normal gain from fourth to fifth grade in math was 15 points, a fifth grade teacher's students who averaged a 15-point gain for the year would score 100, or 100

percent. A teacher whose students consistently averaged an 18-point gain would score 120. TVAAS data is compiled in a database that provides the opportunity for researchers to estimate the extent to which a teacher's effectiveness facilitates academic growth (Sanders and Rivers, 1996). TVAAS has been used extensively throughout the state of Tennessee as well as in the city of Dallas, Texas. School districts in Arizona, North Carolina, Minnesota, and other states have also recently begun using "value-added" teacher data.

Promotion and Career Diversification

6.3.26 Opportunities for promotion and new career opportunities are generally limited for public school teachers who want to stay in the classroom. Most promotions available to teachers tend to result in less time being spent in the classroom; for example, by becoming a school administrator. Department head positions, in which a teacher is appointed to supervise other teachers in a subject area, offer one of the few positions where teachers can advance and still teach. These positions are generally only available for secondary school teachers. Some school districts have created a similar position in elementary schools, most commonly referred to as the "master teacher" position. Depending on the district, department head and master teacher positions usually entail a higher salary and/or a reduced course load.

6.3.27 Within the last decade, experienced teachers may voluntarily seek national certification through the privately run, but largely government-funded, National Board for Professional Teaching Standards. This credential, known as National Board Certification®, is designed to reward superior teachers so that they are less inclined to leave the profession. Teachers seeking this credential enter into an extensive application process that requires, among other things, a portfolio of their work and a videotape of a lesson that they have taught. The National Board is criticized by some for not requiring teachers to produce evidence of student achievement gains and for favoring certain instructional methodologies over others. However, the goal of the National Board—providing a system for recognizing practicing teachers—is widely acclaimed.

6.3.28 The rapid growth in popularity of the National Board has been spurred by many states' subsidization of teachers' application fees and award of financial bonuses and higher pay to any teachers achieving certification. Thirty-four states now offer financial incentives to teachers who earn National Board Certification (Quality Counts, 2003a). As of November 2002, the National Board had certified 23,935 teachers nationwide and had more than 15,000 applicants seeking certification in 2002-03.

6.3.29 The Milken Family Foundation's Teacher Advancement Project (TAP) is an example of another significant effort to create more opportunities for promotion and career advancement for practicing classroom teachers. While the details of the program differ depending on participating school districts' needs and constraints—particularly those detailed in the teacher union contract of participating school districts—TAP restructures the organization of the school. TAP consists of:

- Career advancement opportunities for teachers. Each TAP school contains three levels of teacher positions with each level offering separate pay structures.
- Market-driven compensation. Principals are given the flexibility to compensate teachers differently based on their performance. Principals may also pay more to attract teachers to hard-to-staff subjects and hard-to-staff schools.

- Performance-based accountability. Teachers are evaluated both on how they perform in the classroom (as measured by classroom observations) and on the achievement of their students (as measured by "value-added" statistical methods).

6.3.30 Since TAP includes a pay structure that compensates a few teachers in the school building at a level of pay that exceeds the district salary schedule, the program does cost more, at a rate of approximately $400 more per student per year. Ultimately, TAP aims to foster a more professional atmosphere that will improve retention rates of the highest quality teachers and thus contribute to improved student achievement.

Salary Scales

6.3.31 Almost all public schools and more than half of the private schools in the United States compensate teachers according to uniform salary schedules. These pay schedules are the product of often-contentious negotiations between the local district school board and the local teacher union. Teacher pay is fixed, determined by two criteria: years of experience and education level. Teachers who have a higher degree or enough graduate degree credits receive more pay. The average pay premium for a public school teacher who had earned a Master's degree in 1996 was 11 percent above those who had only earned a Bachelor's degree. Each year a teacher is automatically given a step increase; these step increases average between approximately $1,000 and $1,500 (Goldhaber, 2002), representing a yearly salary increase of approximately 2 to 3 percent (with slightly higher percentage steps for more experienced teachers).

6.3.32 There are many critiques of uniform salary schedules. The primary source of the criticism is that teacher pay is not linked to teacher competency, as measured by student achievement gains or positive teacher evaluations (Henke et al., 1997). They also are not "market-sensitive," meaning that school districts are unable to offer higher salaries, for example, to teachers in high-shortage subjects such as special education. Proponents of uniform salary schedules argue that a fixed pay structure is necessary to ensure fairness and prevent principals from rewarding teachers out of favoritism. Furthermore, they argue, using a single measure such as a standardized test to judge the overall effectiveness of a teacher—and ultimately the pay of a teacher—defines too narrowly the role of the teacher.

6.3.33 States and school districts commonly offer teachers one-time or annual bonuses to supplement their pay. Five states offer bonuses for those teaching subjects prone to teacher shortages, such as special education, mathematics, and science (Quality Counts , 2003a) and 34 states offer bonuses to teachers for earning National Board Certification. Recent reports indicate that states are becoming concerned with the rising costs of National Board Certification bonuses as the rate at which teachers are becoming National Board certified increases. The cost of the program in Georgia, for example, is expected to triple from this fiscal year to the next (from $4.7 to $15.6 million). Last year, as a result of rising costs, California eliminated bonuses for all teachers achieving National Board Certification and has instead targeted those bonuses to only National Board certified teachers who agree to teach in low-performing schools (Sack, 2003). National Board Certification bonuses are not the only bonuses being cut as a result of fiscal shortages. For instance, while the state of Massachusetts had offered a select group of new teachers $10,000 bonuses to be paid out over five years, a few years into the program the state was faced with a budget shortfall and rescinded the remaining bonus payments that it owed.

6.3.34 Some states and districts have begun to use a variety of incentive plans to attract and retain high-quality teachers into typically hard-to-staff, high-poverty and low-achieving schools. In the city of Chattanooga, Tenn., the district transferred 100 weak teachers from nine low-performing schools to the more affluent suburban schools in the district. The district, working in collaboration with a private foundation, then convinced 100 effective teachers, as measured by their students' consistent achievement gains, to transfer into the lower-performing schools. The teachers were offered a $5,000 annual bonus, a $10,000 loan towards a new house that would be forgiven if the teacher stayed five years, and the promise of a $2,000 bonus for boosting the school's test scores.

6.3.35 Generally, private schools, especially non-religious ones, have been more receptive to the idea of performance-based pay than public schools. Within the last decade, 10 percent of public schools and 20 percent of nonsectarian private schools have used some form of performance-based pay at any one time (Ballou, 2001). Ten percent of public school teachers in schools using performance-based pay programs report actually having received performance-based pay compared to 28 percent of teachers in nonsectarian private schools (Ballou, 2001).

6.3.36 A variety of different kinds of performance-based pay programs have been implemented by several school districts across the country (Ballou and Podgursky, 2001). Many of these programs, however, reward teachers less for what they achieve and more for what they do. For example, in Douglas County, Colo. teachers can earn performance pay for assuming extra responsibilities or taking advanced coursework. Other programs like one in Cincinnati, Ohio, focus more on the effectiveness of the teacher and use classroom observations, portfolios and peer assessments to measure how well teachers demonstrate certain skills deemed important for quality instruction. In a few instances, districts, such as the Colonial School District in Pennsylvania, have attempted to offer performance pay for improved student test scores.

Class Sizes

6.3.37 Over the past 30 years, the ratio of teacher to students has declined dramatically in public schools, from 1:22 in 1970 to below 1:17 in 2000 (Hoxby, 2003). In its most accurate interpretation, teacher-student ratio calculations account for the amount of time that all teachers in a school spend instructing students, including teachers who do not teach regular classes every period of the day, such as art, music, and special education teachers (U.S. Department of Education, 2001). Some districts measure teacher-student ratios employing a cruder measure, by simply dividing the number of students by the number of instructional staff irrespective of whether or not all of the staff is teaching full time. Consequently, teacher-student ratios are best interpreted cautiously and in relative terms. Between 1990 and 1998, teacher-student ratios in elementary schools and secondary schools remained close to one for every 17 students (U.S. Department of Education, 2001). Not surprisingly, some research shows that there are more students per teacher in districts reporting the highest proportion of minorities and that schools with the lowest number of students per teacher were in the most affluent districts (Sietsema, 1996).

6.3.38 Class size measures provide a more accurate measure than student-teacher ratios of how many students a regular classroom teacher instructs at one time. Although class size and teacher-student ratios are not identical measures, they generally correlate. The class size measure generally reports a higher number of students to teacher than the teacher-student

ratio. With some exceptions, school districts determine their target class sizes during annual budget considerations. Generally, districts aim to keep class sizes lower in elementary grades than in secondary grades. District class size targets are often exceeded in practice. Some states put statutory limits on class sizes, particularly in pre-kindergarten, kindergarten and special education classes. Where state law dictates class size, schools cannot exceed the maximum number of students. While studies have shown that students, especially those in primary grades (Finn and Achilles, 1999) and minority students (Krueger and Whitmore, 2000), do benefit from smaller classes (Finn et al., 1989), little evidence exists that lower class sizes improve teacher retention (Hanushek et al., 1999).

6.3.39 During the latter half of the 1990s, many states launched initiatives to lower class size. In 1996, California approved a nearly $1 billion class-size reduction effort. Before the legislation took effect, the average elementary class size in California was 29, the highest in the country. By 2003, with over 90 percent of kindergarten through third-grade classrooms participating, the average class size for participating classes was 19 students. An extensive study of the initiative did not find any measurable difference in teacher retention in schools in the bottom and top socioeconomic quartiles. Schools in the middle two quartiles showed moderate improvements (6 percent on average) in teacher retention rates (CSR Research Consortium, 2002). The researchers concluded that is was difficult and perhaps premature to draw any substantive conclusions.

6.3.40 Some policy-makers point to California's class-size reduction program as evidence that a large investment in class-size reduction is not worth the inconclusive returns in student achievement and the limited improvements in teacher retention. Critics of the initiative assert that students are likely to learn more in a large class with an effective teacher than in a smaller class with an ineffective teacher. Others argue that while large-scale programs are costly and the California program was perhaps too ambitious, the potential benefits of class-size reduction are generally worth the expense. By 2002, 32 states had implemented a class-size reduction program and/or limited class size by law (Quality Counts, 2003a).

Teacher Workloads

6.3.41 The hours required to be at work are supposed to be the expected number of hours the employer requires teachers to be at school. In most U.S. occupations, this would be 40 hours a week. For teachers, it is not clear what is reported; it may be an overstatement, based more on the number of hours usually worked, rather than on the statutory number of hours for which the teacher is considered to be working under the terms of the contract. Recent data from the National Center for Education Statistics indicate that elementary and secondary schools teachers spend an average of six hours per day teaching (Organization for Economic Cooperation and Development, 2003). Teachers do not receive overtime pay and are not considered to be hourly wage workers. In 1993-94, the required hours averaged only 32 hours per week. However, in some teacher contract disputes, teachers will only "work to the rule," which is a shorter workweek than they usually work.

School and Personal Safety and Student Discipline

6.3.42 Though high-profile cases of school violence have occurred in affluent schools, such as the Columbine High School massacre in 1999, teachers' perceptions of their own safety is often associated with the poverty level of their school. Approximately 34 percent of teachers in high-poverty public schools and 11 percent of teachers in low-poverty public

schools reported physical conflicts among students as a serious or moderate problem (Park, 2003). Twenty-one percent of teachers in high-poverty public schools, and 9 percent of teachers in low-poverty public schools (Park, 2003) reported robbery or theft as a serious or moderate problem (U.S. Department of Education, 2002d).

6.3.43 Overall violent crime rates in schools have declined in the past decade. Between 1992 and 2001, there was a 42 percent decrease in the violent crime victimization rate at schools. Nevertheless, issues related to school violence and safety remain a source of great concern in the United States. In 2001, some 7 percent of students ages 12-18 (two million) were victims of crimes occurring on school properties or on the way to or from school. Of these crimes, 161,000 included rape, sexual assault, robbery, or aggravated assault. There were 31 school-associated deaths between July 1, 2001 and June 30, 2002, including 23 homicides, 14 of which involved school-aged children (DeVoe et al., 2003).

6.3.44 Since 1999, following a rash of well-publicized incidents of school violence, public schools across the country have adopted measures aimed at reducing school violence and making teachers, parents, and students feel more secure. In public schools, 8 percent now use random metal detector checks on students and 24 percent report a daily presence of police or security (U.S. Department of Education, 2002d). Such practices are not as common in private schools. Less than 1 percent of private schools reported implementing random metal detector checks on students and only 5 percent reported having a daily presence of police or security personnel (U.S. Department of Education, 2002d).

Retirement

6.3.45 The average retirement age of public elementary and secondary school teachers in the United States is 59. In order to encourage career longevity among teachers, many states build length of service into their pension formulas. In Missouri, teachers who work for 30 years receive 66 percent of their salary following retirement, while teachers who work for 31 years receive 69 percent (Werneck, 2001). The state of Michigan is considering reforming its pension policy so that any teacher whose years of service combined with his or her age equal 80 would be eligible for full retirement benefits (American Federation of Teachers, 2002).

6.3.46 Other states have attempted to reform pension polices in order to both bring retirees back to the classroom and keep retirement-eligible teachers in the classroom. Such states have allowed teachers to draw a salary and a pension concurrently or change their pension benefit formulas (Werneck, 2001). While many of these proposals have been intended to retain teachers, the reality of recent budget deficits has forced some states to implement policies that instead encourage early retirement.

6.3.47 There is some evidence that encouraging teachers to stay in teaching for long tenures may not maximize the learning potential of students. Numerous studies indicate teacher effectiveness may start to diminish after teachers have been in the classroom a certain number of years, which some research estimates to be between 10 to 15 years (see, for example, Kain and Singleton, 1996). Nevertheless, concerns over teacher shortages often prompt states and districts to prolong teachers' careers.

6.4 Policy Initiatives and Impact

6.4.1 As schools in the United States are being held more accountable for their outcomes, retention policies are shifting towards a view of teacher quality that is defined by how much students are learning. The *No Child Left Behind Act (NCLB)* of 2001 helps to articulate this emerging definition. The law recognizes that teachers play a critical role in producing student achievement by mandating that a significant portion of the NCLB funds, $3.2 billion, be directed to the states and local school districts to improve teaching quality.

6.4.2 Several of the potential strategies to ensure teacher quality suggested by the U.S. Department of Education, charged with overseeing NCLB, directly address the question of teacher retention. Among them are:

- New teacher induction and mentoring programs;
- Reduced class schedules that serve to lessen the teaching responsibilities of new teachers;
- Performance-based pay; and
- The development of multiple career paths that involves the creation of differentiated positions that qualified teachers can choose to pursue while remaining in the classroom.

6.4.3 For any of these strategies, the U.S. Department of Education stresses the need for states and districts to consider ways in which reforms will contribute to the ultimate goal of student achievement. This shift challenges longstanding teacher policies that many states have protected, perhaps long past their relevance. While there are indeed signs that changes in the educational landscape in the Unites States are afoot, the process will take time and will demand a willingness from states and local districts to consider new approaches to myriad challenges they must confront.

6.4.4 Currently, few of the suggested strategies described in this chapter are widely practiced in the United States. For example, while many states and districts have implemented some form of mentoring program, only five states require schools to provide mentors with reduced course-loads (Quality Counts, 2003a). Few performance-based compensation plans are currently in place, and even fewer are directly linked to student achievement. Often, these programs have fallen victim to inadequate funding, insufficient support, or open resistance from teachers, unions, and administrators.

6.4.5 The shift in the United States towards holding all levels of the education system accountable for student achievement may be altering long-held, often entrenched views of how schools should be organized and teachers compensated. The Tennessee Value-Added Assessment System, previously discussed in this chapter, offers American schools a tool to identify effective teachers. As noted above, the Milken Family Foundation's Teacher Advancement Program (TAP) may portend a real shift in the structure of the profession, as even some teacher union officials have begun to publicly acknowledge the need to reorganize pay structures to permit teachers to advance in their careers while remaining classroom teachers.

6.5 Conclusion

6.5.1 The United States has long struggled with its inability to narrow the achievement gap between affluent and poor children, whites and minorities. Americans have long demonstrated a commitment to addressing this problem, although status quo solutions have so far proved inadequate. The importance of encouraging high-quality teachers to teach the children most in need of quality schooling is a prime concern for states and school districts. While approaches such as that taken in Chattanooga, Tenn., where the best teachers are paid to transfer to the lowest performing schools, are still rare enough to deserve newspaper coverage, the ideas are spreading.

6.5.2 With the gradual adoption of accountability as the central precept of education in the United States, it is not sufficient to view teacher retention or any other teacher quality issue in isolation; one must also consider the degree to which it contributes to student achievement. If current efforts are any indication, future policy initiatives are likely to take a variety of approaches to retain those teachers who have demonstrated a willingness and an ability to improve student achievement.

References

American Federation of Teachers (2003), *Survey and Analysis of Teacher Salary Trends, 2002,* Washington, D.C.: American Federation of Teachers.

American Federation of Teachers (2002), "States offer early retirement to ease budget crunch: What FP/AFT need to consider when weighing early retirement," *Public Service Reporter*, June/July 2002, http://www.aft.org/publications/ps_reporter/june_july02/retirement.html, accessed April 1, 2004.

Anthony, Rebecca and Roe, Gerald (2000), *Selecting Teachers for Tomorrow's Classrooms*, University of Iowa Educational Placement Office for the Educational Placement Consortium. http://www.uiowa.edu/~ournews/2000/august/0801school_admin.html.

Archer, Jeff (2000), "Districts Targeting Teacher Seniority in Union Contracts" *Education Week*, 19(31):5, April 12, 2000.

Archer, Jeff (2003), "Increasing the Odds," *Education Week: Quality Counts 2003*, January 2003.

Astin, Alexander W.; Oseguera, Leticia; Sax, Linda J. and Korn, Williams S. (2002), *The American Freshmen: Thirty-Five Year Trends,* Los Angeles, Calif.: Higher Education Research Institute, University of California, Los Angeles.

Ballou, Dale (July 1997), *The Condition of Urban School Finance: Efficient Resource Allocation in Urban Schools*, Washington, D.C.: Selected Papers in School Finance 1996, National Center for Education Statistics, U.S. Department of Education. Also at http://nces.ed.gov/pubs98/finance/98217.htm.

---------- (2001), "Pay for performance in public and private schools," *Economics of Education Review*, 20.

Ballou, D. and Podgursky, Michael (1997), *Teacher Pay and Teacher Quality*, Kalamazoo, Mich.: W.E. Upjohn Institute.

---------- (1998), "Teacher Recruitment and Retention in Public and Private Schools," *Journal of Public Policy and Management*, 17(3): 393-417.

---------- (1999), "Teacher Training and Licensure: A Layman's Guide," in Marci Kanstoroom and Chester E. Finn Jr. (eds.), *Better Teachers, Better Schools*, Washington, D.C.: Thomas B. Fordham Foundation and Education Leaders Council.

---------- (2001), "Defining Merit: Let the Market Decide" *Education Matters*, Spring 2001.

---------- (2001a), *Personnel Policy in Charter Schools*, Washington, D.C.: Thomas B. Fordham Foundation.

Barber, Randy (2003), *Report to the National Education Association on the Trends in Foreign Teacher Recruitment*, Washington D.C.: Center for Economic Organizing.

Betts, J. R., Rueben, K.S., & Danenberg, A. (2000), *Equal resources, equal outcomes? The distribution of school resources and student achievement in California,* San Francisco: Public Policy Institute of California.

Blair, Julie (2003), "Critics Question Federal Funding of Teacher Test," *Education Week*, October 8, 2003.

Boser, Erlich (2000), "A Picture of the Teacher Pipeline: Baccalaureate and Beyond," *Quality Counts 2000—an Education Week, Pew Charitable Trusts Report on Education in the 50 States*, January 13, 2000, Volume 19, Number 18, pages 16-17. Also at http://edweek.org/sreports/qc00/templates/article.cfm?slug=intro-s1.htm&keywords=teacher%20pipeline

Boyd, Donald, Lankford, Hamilton & Loeb, Susan (2003) *Draw of Home: How Teacher Preferences for Proximity Disadvantage Urban Schools*, Cambridge, Mass: National Bureau of Economic Research. Also at: http://www.nber.org/papers/w9953

Bridges, Edwin (1992), *The Incompetent Teacher*, Philadelphia, Penn: Falmer Press.

Carnegie Task Force on Teaching as a Profession (1986), *A Nation Prepared: Teachers for the 21st Century*, New York: Carnegie Corporation of New York.

Cornett, Lynn (2001), *Teacher Supply and Demand in Tennessee,* Atlanta, Ga.: Southern Regional Education Board (SREB).

Council of Great City Schools (2001), "Urban School Superintendents: Characteristics, Tenure and Salary, *Urban Indicator*, http://www.cgcs.org/reports/supers2001.PDF, accessed August 25, 2004.

Council of Chief State School Officers (CCSSO) (2003), *Chief State School Officers Method of Selection*, CCSSO website: ccsso.org/chief_state_school_officers/method_of_selection/index.cfm, accessed August 25, 2004.

Crewin, Lawerence (1988), *American Education: The Metropolitan Experience 1876-1980*, New York: Harper and Row.

CSR Research Consortium (2002), "Technical Appendix," *What We Have Learned About Class Size Reduction in California,* Eds. George W. Bohrnstedt and Brian M. Stecker, Sacremento, CA: California Department of Education.

Darling-Hammond, L. (1996), *What Matters Most: Teaching for America's Future*, New York: National Commission on Teaching and America's Future.

---------- (1997), *Doing What Matters Most: Investing in Quality Teaching*, New York: National Commission on Teaching and America's Future.

Darling-Hammond, Linda and Sykes, Gary (2003), "Wanted: A National Teacher Shortage Supply Policy for Education: The Right Way to Meet the 'Highly Qualified Teacher' Challenge," *Education Policy Analysis and Archives*, 11(33), See also: http://epaa.asu.edu/epaa/v11n33/, accessed August 27, 2004.

DeVoe, J., Peter, K., Kaufman, P., Ruddy, S., Miller, A., Planty, M., Snyder, T., Rand, M. (2003), *Indicators of School Crime and Safety*, Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

Education Commission of the States (2000), *Compulsory School Age Requirements*, Denver, Colo.: Author. Also at: http://www.ecs.org/ecsmain.asp?page=/search/default.asp, accessed March 31, 2004

Education Commission of the States (2002), *State Notes: Professional Standards Boards—State-Level Policies*, Denver, Colo: Education Commission of the States (can the author also be the publisher?) http://www.ecs.org/clearinghouse/40/88/4088.htm, accessed August 26, 2004.

Ehrenberg, R., Brewer, D. (1994), "Do School and Teacher Characteristics Matter? Evidence From High School and Beyond," *Economics of Education Review*, 14.

Lines, Patricia (2001), "Homeschooling," ERIC Digest, retrieved August 26, 2004, http://www.eicfacility.net/databases/ERIC_Digests/ed457539.html.

Feistritzer, C.E. and Chester, D.T. (1999), *The Making of a Teacher: A Report on Teacher Preparation in the United States*, Washington, D.C.: Center for Education Information.

---------- (2003), *Alternative Teacher Certification: A State-by-State Analysis*, Washington, D.C.: National Center for Education Information.

Ferguson, R., Ladd, H. (1996), "How and Why Money Matters: An Analysis of Alabama Schools," *Holding Schools Accountable*, Washington, D.C.: Brooking Institution.

Finn, J.D.; Fulton, D.; Zahorias, J.; Nye, B.A. (1989), "Carry-over effects of small classes," *Peabody Journal of Education* 67(1), 75-84.

Finn, Jeremy D. and Achilles, Charles M. (Summer 1999), "Tennessee's Class Size Study: Findings, Implications, Misconceptions," *Educational Evaluation and Policy Analysis*, v.21, n.2, 97-110.

Fowler, R.C. (2003), "The Massachusetts Signing Bonus Program for New Teachers: A model of teacher preparation worth copying?" *Education Policy Analysis Archives, 11*(13). Retrieved November 24, 2003 from http://epaa.asu.edu/epaa/v11n13/.

Fuller, Howard (2003), *An Impossible Job? The View from the Urban Superintendents Chair,* Seattle, Wash.: University of Washington, Center on Reinventing Public Education.

Gold, Y. (1996), "Beginning teacher support: Attrition, mentoring and induction," *Handbook of Teacher Education* (2nd Edition).

Goldberg, Phyllis E., Proctor, Karen M. (2000), "Teacher Voices: A Survey on Teacher Recruitment and Retention," *Scholastic Teach Today and Tomorrow*. Retrieved August 26, 2004 at:
http://teacher.scholastic.com/professional/teachertoteacher/ttt/voices_part_1.pdf.

Goldhaber, D. and Brewer, D. (1999), "Teacher Licensing and Student Achievement," in Marci Kanstoroom and Chester E. Finn Jr. (eds.), *Better Teachers, Better Schools*, Washington, D.C.: Thomas B. Fordham Foundation and Education Leaders Council.

Goldhaber, D. (2002), *How Has Teacher Compensation Changed?* Washington, D.C.: Selected Papers in School Finance 2000-2001, National Center for Education Statistics, U.S. Department of Education.

Greenwald, R., Hedges, L., Laine, R. (1996), "The Effect of School Resources on Student Achievement," *Review of Educational Research*, 66.

Hanushek, Eric A. (2002), "The Seeds of Growth," *Education Next*, Fall 2002.

Hanushek, Eric A., Kain, John F. and Rivkin, Steven G. (2002), "Teachers, Schools, and Academic Achievement: Working Paper Number 6691" Cambridge, Mass: National Bureau of Economic Research.

---------- (2004), "Why Public Schools Lose Teachers." *Journal of Human Resources* 39(2): 326-354.

Hanushek, Eric; Mayer, Susan E.; Peterson, Paul (ed.) (1999), "The Evidence of Class Size" in *Earning and Learning: How Schools Matter*, Washington, D.C.: Brookings Institution.

Harman, Donna (2003), "A crisis looms for some North Dakota schools," *The Christian Science Monitor*, November 18, 2003.

Henke, R.R.; Geis, S.; Giambattista, J. (1996), *Out of the Lecture Hall and Into the Classroom: 1992-93 College Graduates and Elementary/Secondary School Teaching,* Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

Henke, Robin R., Choy, Susan P., Chen, Xianglei, Geis, Sonya, and Naomi, Martha. (1997), *America's Teachers: Profile of a Profession, 1993-94*, Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

Henke, Robin and Zahn, Lisa (2001), *Attrition of New Teachers Among Recent College Graduates: Comparing Occupational Stability Among 1992-1993 Graduates Who Taught and Those Who Worked in Other Occupations*, Washington D.C.: National Center for Education Statistics, U.S. Department of Education.

Hess, F.M. (2001), *Tear Down this Wall: The Case for A Radical Overhaul of Teacher Certification*, Washington, D.C.: Progressive Policy Institute.

Hess, Frederick M. (2002), *School Boards at the Dawn of the 21st Century: Conditions and Challenges of District Governance*, prepared for the National School Boards Association, retrieved August 26, 2004, at http://www.nsba.org/site/docs/1200/1143.pdf.

Hirsch, E.D. (1996), *The Schools We Need and Why We Don't Have Them*. New York: Doubleday.

Hirsch, E., Koppich, J.E., and Knapp, M.S. (2001), *Revisiting What States Are Doing to Improve the Quality of Teaching: An Update on Patterns and Trends,* Seattle, Wash.: University of Washington, Center for the Study of Teaching and Policy.

Hoffman, Lee (2002), *Overview of Public Elementary and Secondary Schools and Districts: School Year 2000-01*, Washington, D.C.: National Center for Educational Statistics, U.S. Department of Education.

Hofstadter, Richard (1963), *Anti-Intellectualism in American Life*, New York: Random House.

Hoxby, Caroline (2003), "What Has Changed and What Has Not," *Education Next*: Spring 2003. Retrieved April 27, 2004 at http://www.educationnext.org/unabridged/20032/73.pdf.

Hussar, W. (1999), *Predicting the Need for Newly Hired Teachers to 2008–09*, Washington, D.C.: National Center for Educational Statistics, U.S. Department of Education.

---------- (2002), *Projections of Education Statistics to 2011*, Washington, D.C.: National Center for Educational Statistics, U.S. Department of Education.

Ingersoll, R. (1995), *Teacher supply, teacher qualifications and teacher turnover*, Washington, D.C., National Center for Education Statistics, U.S. Department of Education.

---------- (Fall 2000), "Teacher Turnover and Teacher Shortages: An Organizational Analysis," *American Educational Research Journal*, 38, 499-534.

---------- (2003), *Who Control's Teacher's Work: Power and Accountability in America's Schools*, Cambridge, Massachusetts: Harvard University Press.

Jenes, Ted (2002), "Poudre School District and Affordable Housing for Teachers," Fort Collins, Colo.: Research and Development Center for the Advancement of Student Learning. Retrieved August 26, 2004, http://www.colostate.edu/depts/r-dcenter/TeacherHousingPolicyBrief.html.

Jerald, Craig (2003) *All Talk, No Action: Putting and End to Out-of-Field Teaching*, Washington D.C.: The Education Trust.

Johnson, Frank (2000), *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 1998-99*, Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

---------- (2002), *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 1999-2000*, Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

Johnson, Susan M. (2000), "Teaching's Next Generation," *Education Week*, Volume 19, Number 39, June 7, 2000.

Kain, J., and Singleton, K. (1996), "Equality of Educational Opportunity Revisited," *New England Economic Review*, May-June.

Kanstoroom, Marci and Finn, Jr., Checker E. (1999), *Better Teachers, Better Schools*, Washington, D.C.: Thomas B. Fordham Foundation.

Kerbow, D., (1996) "Patterns of Urban Student Mobility and Local School Reform," J*ournal of Education for Students Placed at Risk*, 1(2).

Krueger, Alan B. and Whitmore, Diane M. (2000), "The Effect of Attending a Small Class in the Early Grades on College Test Taking and Middle School Test Results." Princeton, NJ: Princeton University, National Bureau of Economic Research Paper, retrieved August 26, 2004, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=223492

Lankford, Hamilton, Loeb, Susanna, Wyckoff, James (2002), "Teacher Sorting and the Plight of Urban Schools," *Education Evaluation and Policy Analysis*, Vol. 24. No. 1, 37-62.

Levin, Jessica and Quinn, Meredith (2003), *Missed Opportunities: How We Keep High-Quality Teachers Out of Urban Schools*, New York: The New Teacher Project. Retrieved August 26, 2004 at http://www.tntp.org/.

Levine, A. (1999), "Dueling Goals for Education," *New York Times,* April 7, p. A21.

Lieberman, Myron. (2000), *Understanding the Teacher Union Contract: A Citizen's Handbook*, New Brunswick, New Jersey and London (United Kingdom): Transaction Publishers.

Lines, Patricia (2000), "When home schoolers go to school: A partnership between families and schools," *Journal of Education* 75 (1 and 2), 163.

Lippman, Laura, Burns, Shelley, and McArthur, Edith. (1996), *The Challenge of Location and Poverty*, Washington, D.C.: National Center for Education Statistics, U.S. Department of Education, pp. 96-97. Also at: http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=96184. Accessed August 16, 2004.

Liu, Edward (2003), "New Teachers' Experiences of Hiring: Preliminary Findings From a Four-States Study" (a paper prepared for the annual meeting of the American Research Association, Chicago, April 2003), 9.

Mitchell, R. and Barth, P. (1999), *Not Good Enough: A Content Analysis of Teacher Licensing Examinations*, Education Trust, Washington, D.C.

Murnane, Richard J. (1987), "Attracting Talented Students to Teaching," *Harvard Educational Review* 57(2), May 1987, 178, 181.

Murnane, Richard J., Singer, Judith D., Willet, John B., Kemple, James J., Olsen, Randall J. (1991), *Who Will Teach? Policies That Matter*, Cambridge, Massachusetts and London, England: Harvard University Press.

Murray, F. (1998), "Questions and Answers about TEAC," remarks before the Education Leaders Council in San Jose, California, September 12, comments can be found through: www.educationleaders.org, accessed on April 1, 2004.

Murphy, P., DeArmond, M. and Guin, K. (2003), "A National Crisis or Localized Problems? Getting Perspective on the Scope and Scale of the Teacher Shortage," *Education Policy Analysis Archives* 11 (23). http://epaa.asu.edu/epaa/v11n23.

National Association of State Directors of Teacher Education and Certification (2003), *NASDTEC Manual,* available through the National Association of State Directors of Teacher Education and Certification website: http://www.nasdtec.org/manual.tpl, accessed August 27, 2004.

National Education Association (1987), *Status of the American Public School Teacher: 1985-86*, Washington, D.C.: NEA.

National Education Association (2003), *Status of the American Public School Teacher 2000–01*, Washington, D.C.: Author.

New Teacher Project website: http://www.tntp.org/who/index.html.

New York State Department of Education (2002), *Report to the Governor and State Legislature 2002*.

Ng, Jennifer C. (2003). Teacher Shortages in Urban Schools: The Role of Traditional and Alternative Certification Routes in Filling the Voids." Education and Urban Society, 35(4), 380-98.

Nolin, Mary Jo, Rowlan, Cassandra, Farris, Elizabeth. (1994), *Public Elementary Views on Teacher Performance Evaluations*, Washington, D.C.: Statistical Analysis Report, National Center for Education Statistics, U.S. Department of Education.

Organization for Economic Cooperation and Development (OECD) (2003), *Education at a Glance: OECD Indicators*, Paris, France: Author.

Paige, Roderick (2003), Speech at the National Press Club, Washington D.C. March 18, 2003, available at http://www.ed.gov/news/speeches/2003/03/03182003.html, accessed October 20, 2004.

Park, Jennifer (2003), "Deciding Factors," *Education Week: Quality Counts 2003*, January 2003.

Podgursky, Michael (2003), "Fringe Benefits" *Education Next*, Spring 2003, Figure 2, http://www.educationnext.org/20033/71.html.

Podgursky, Michael (2003a), "Personal Policy in Traditional Public, Charter, and Private Schools," NCSC Review, Vol. 1, No. 1, January 2003, http://www.nationalcharterschoolclearinghouse.net/NCSCReview/EditionOne.pdf

Potts, Abigail, Blank, Rolf, and Williams, Andra (2002), *Key State Education Policies on K-12 Education: 2002*, Washington D.C.: Council of Chief State School Officers.

Project RISE (Resources for Indispensable Schools and Educators) (2004), website located at: http://www.risenetwork.org, accessed August 27, 2004.

Public Agenda (2000), *Sense of Calling: Who Teaches and Why*, New York, NY: Public Agenda.

Public Agenda (2004), *Education Issues Guide*: http://www.publicagenda.org/issues/frontdoor.cfm?issue_type=education, accessed August 27, 2004.

Quality Counts (2003), "State Efforts to Recruit and Retain Qualified Teachers," *Education Week*.

Quality Counts (2003a), "Annual Policy Survey 2002", *Education Week.*

Raymond, M. and Fletcher, S. (2002), "The Teach for America Evaluation," *Education Next*, Spring.

Recruiting New Teachers, Inc., (2004), National Teacher Recruitment Clearinghouse, http://www.rnt.org/channels/clearinghouse/, accessed August 27, 2004.

Rose, Lowell C; Gallup, Alec M (2003), *The 35th Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes Toward the Public Schools*, Phi Delta Kappan

Rotherham, A. and Mead, S. (2003), "Back to the Future: The History and Politics of Teacher Licensure and Certification," paper presented at the American Enterprise Institute, Washington, D.C., Oct. 23.

Roza, Marguerite & Hill, Paul T. (2003), *How Within District Inequities Help Some Schools Fail*, Seattle, WA: Center on Reinventing Education, University of Washington.

Sack, Joetta L. (2003), "Board Stamp for Teachers Raises Red Flags," *Education Week*, November 12, 2003.

Said, Yasin (1999), "The Supply and Demand of Elementary and Secondary School Teachers in the United States," ERIC Digest, http://www.ericfacility.net/databases/ERIC_Digests/ed436529.html.

Sanders and Rivers (1996), *Cumulative and Residual Effects of Teachers on Future Student Academic Achievement,* Knoxville, Tennessee: University of Tennessee Value-Added Research and Assessment Center.

Shen, J. (1997), "Has the Alternative Certification Policy Materialized Its Promise?" *Educational Evaluation and Policy Analysis* 19, no. 3, 276-283.

Shields, P. M., Humphrey, D. C., Wechsler, M. E., Riehl, L. M., Tiffany-Morales, J., Woodworth, K., Young, V. M., & Price, T. (2001). *Teaching and California's Future: The Status of the Teaching Profession 2001.* Santa Cruz: The Center for the Future of Teaching and Learning.

Sietsama, John P. (1996), *Trends in School District Demographics, 1986-87 to 1990-91,* Washington, D.C.: National Center for Education Statistics, U.S. Department of Education.

Steel, L. and R. Levine (1994), *Educational Innovation in Multiracial Contexts: The Growth of Magnet Schools in American Education*, Washington, D.C.: U.S. Department of Education.

Stone, J. (2000), "Collective Bargaining and Public Schools," *Conflicting Missions? Teacher Unions and Educational Reform*, Washington, DC: Brookings Institution Press, Tom Loveless, ed.

Sylvan Education Solutions web site: http://www.sylvansolutions.com/home.cfm.

Temin, Peter (2002), "Teacher Quality and the Future of America," Cambridge MA: *National Bureau of Economic Research*, Working Paper 8898, © 2002.

Turner, S. (1998), "The Evolving Production Function in Schools of Education," paper presented at the 1998 Association of Public Policy and Management Meeting in New York, NY, http://www.appam.org/appamwww-cgi/confarch/1998/1998ppdb.cgi (Author is on the faculty at the University of Virginia).

United Nations Population Fund (2001), *The State of World Population 2001, Footprints and Milestones: Population and Environmental Changes.* http://www.unfpa.org/swp/2001/english/indicators/indicators2.html, accessed 04/27/04.

U.S. Census Bureau, (2002) *Preliminary Report No.1, The 2002 Census of Governments*, 1(1), U.S. Department of Commerce, Washington D.C.

---------- (2002a), "*Table P-24. Educational Attainment--Full-Time, Year-Round Workers 25 Years Old and Over by Median Earnings and Sex: 1991 to 2001*," Washington, D.C.: U.S. Census Bureau.

---------- (2003), "Living Arrangements of Black Children Under 18 years old: 1960 to the present" Available at: http://www.census.gov/population/socdemo/hh-fam/tabCH-3.pdf

U.S. Department of Education (1996), National Center for Education Statistics, *1993-94 Baccalaureate and Beyond Longitudinal Study*, Washington, D.C.: Author.

---------- (1996a), National Center for Education Statistics, *Schools and Staffing in the U.S.: A Statistical Profile: 1993-94*, Washington, D.C.: Author.

---------- (1997), National Center for Education Statistics, *America's Teachers: Profile of a Profession, 1993-94*, Washington, D.C.: Author.

---------- (2000), National Center for Education Statistics, *Teacher Supply in the United States: Sources of Newly Hired Teachers in Public and Private Schools, 1987-88 to 1993-94*, Washington, D.C.: Author.

---------- (2000a), National Center for Education Statistics, *Vocational Education in the United States: Toward the Year 2000*, Washington, D.C.: Author.

---------- (2000b), National Center for Education Statistics, *Monitoring School Quality: An Indicators Report*, Washington, D.C.: Author.

---------- (2001), National Center for Education Statistics, *The Condition of Education 2001*, Washington, D.C.: Author.

---------- (2001a), National Center for Education Statistics, *Private School Universe Survey, 1999-2000*, Washington, D.C.: Author.

---------- (2001b), National Center for Education Statistics, *Homeschooling in the United States: 1999*, Washington, D.C.: Author.

---------- (2001c), National Center for Education Statistics, *Teacher Preparation and Professional Development: 2000*, Washington, D.C.: Author.

---------- (2001d), National Center for Education Statistics, *Public School Student, Staff, and Graduate Counts by States*, School Year 1999-2000, Washington, D.C.: Author.

---------- (2002), Office of Postsecondary Education, *Meeting the Highly Qualified Teachers Challenge: The Secretary's Annual Report on Teacher Quality*, Washington, DC: Author.

---------- (2002a), National Center for Education Statistics, *Private Schools: A Brief Portrait. Findings from the Condition of Education, 2002,* Washington, D.C: Author.

---------- (2002c), National Center for Education Statistics, *Digest of Education Statistics 2001*, Washington, D.C.: Author.

---------- (2002d), National Center for Education Statistics, *Schools and Staffing Survey, 1999-2000: Overview of the Data for Public, Private, Public Charter and Bureau of Indian Affairs Elementary and Secondary Schools*, Washington, D.C.: Author.

---------- (2002f), National Center for Education Statistics, *Qualifications of the Public School Teacher Workforce: Prevalence of Out-of-field Teaching 1987-88 to 1999-2000*, Washington, D.C.: Author.

---------- (2003), *Education in the United States: A Brief Overview*, Washington, D.C. http://www.ed.gov/international/edus, accessed April 1, 2004.

---------- (2003a), *Meeting the Highly Qualified Teachers Challenge: The Secretary's Second Annual Report on Teacher Quality*, Washington, DC: Office of Postsecondary Education.

---------- (2003b), National Center for Education Statistics, *Digest of Education Statistics 2002*, Washington, D.C: Author.

---------- (2003c), National Center for Education Statistics, *Public School Student, Staff, and Graduate Counts by States*, *School Year 2001-02*, Washington, D.C.: Author.

---------- (2004), National Center for Education Statistics, *Teacher Attrition and Mobility: Results from the Teacher Follow-up Survey, 2000-01*, Washington, D.C.: Author.

---------- (2004a), *Ten Facts About k-12 Education Funding*, Washington, D.C.: Author.

---------- (2004b), National Center of Education Statistics, tables compiled from the Private School Universe Survey 2001-2002, and Common Core of Data: 2001-02, Washington, D.C.: Author.

---------- (2004c) National Center for Education Statistics, "Common Core of Data" and "Financial Statistics of Institutions of Higher Education," surveys and unpublished data, January 2004, Washington, D.C.: Author.

---------- (2004d) National Center for Education Statistics, Private School Universe Survey, 2001-2002, Washington, D.C.: Author.

---------- (2004e), Compiled from the National Center for Education Statistics, Schools and Staffing Survey, "Public Teacher Questionnaire," 1990-91, 1993-94, and 1999-2000 and "Charter Teacher Questionnaire," 1999-2000.

---------- (2004f) unpublished table compiled from Schools and Staffing Survey, 1999-2000

---------- (2004g) *Improving America's Schools Act of 1994*, as found at http://www.ed.gov/legislation/ESEA/index.html, accessed 10/05/04.

U.S. Department of Labor, Bureau of Labor Statistics, (2001), "2000-2010 Employment Projections," http://www.bls.gov/news.release/ecopro.nr0.htm, accessed 12/16/03.

---------- Bureau of Labor Statistics (2002), *National Occupational Employment and Wage Estimates,* Washington D.C.

---------- Bureau of Labor Statistics (2003)*, National Compensation Survey: Occupational Wages in the United States, July 2002*, Washington, D.C.: Bureau of Labor Statistics, Tables 2.2 and 2.3.

Vergari, S. and Hess, F.M. (2002), "The Accreditation Game," *Education Next*, Fall 2(3), 48-57.

Walsh, K. (2002), *Teacher Certification Reconsidered: Stumbling for Quality*, Baltimore, MD: Abell Foundation.

Wayne, A.J. (2000), "Teacher Supply and Demand: Surprises from Primary Research," *Education Policy Analysis Archives* 8 (47). http://epaa.asu.edu/epaa/v8n47.html

Werneck, Laura P. (2001), "Alleviating Teacher Shortages through Pension Plan Redesign," *Government Finance Review*, October 2001, http://www.nctr.org/content/pdf/tchrshortage.pdf, accessed April 1, 2004.

Westat (2002), "Service providers' intent to stay in their profession, by type of service provider," table 1.32, www.spense.org/.

Whitehurst, Grover J. (2002), "Improving Teacher Quality," *Spectrum: The Journal of State Government*, Summer, 2002.

Whitener, Summer D., Gruber, K., Lynch, H., Tingos, K., Fondelier, S. (1997), *Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey: 1994-95*: Washington, D.C.: School and Staffing Survey, National Center for Education Statistics, U.S. Department of Education, Tables 1, 7, 8, 10, and 12.

Wise, Arthur; Darling-Hammond, Linda; Berry, Barnett (1987), *Effective teacher selection: From recruitment to retention,* Santa Monica, CA: Rand Corporation.