Minority Teacher Recruitment, Development, and Retention

THE EDUCATION ALLIANCE at Brown University

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Northeast and Islands Regional Educational Laboratory (LAB)

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This publication is based on work supported by the Institute of Education Sciences (IES), U.S. Department of Education, under Contract Number ED-01-CO-0010. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of IES, the U.S. Department of Education, or any other agency of the U.S. Government.

Completion of *Minority Teacher Recruitment, Development, and Retention* was made possible by the leadership and coordination of Maria Pacheco, director of Equity and Diversity Programs for The Education Alliance at Brown University, who oversees the LAB's national leadership area of teaching diverse learners.

Members of the LAB's National Leadership Advisory Panel contributed to the review of this document. Their recommendations help assure that the LAB's work concerning equity and diversity is appropriate, effective, and useful in the field, particularly in improving educational outcomes for students with diverse linguistic and cultural backgrounds. Karla Lewis and Dean Stecker provided important insights and suggestions. Ellen Swartz and Ana Maria Villegas served as outside reviewers and provided invaluable feedback.

At the "Minority Teacher Recruitment, Development, and Retention" research symposium sponsored by The Education Alliance on June 3-4, 2004, researchers and practitioners from throughout the country offered comments and observations about the resources, policies, and practices needed to recruit, develop, and retain minority teachers from diverse cultural backgrounds. We are grateful to the participants for their discussion of the complexity and challenges of recruiting, supporting, and retaining minority teachers in the classroom.

Table of Contents

Introduction

When school systems began to desegregate after *Brown v. Board of Education*, 80% of the school population was white and 20% was minority. By 1996, the number of minority students had risen to approximately 35% of the student population, and today it stands at nearly 40% and growing. These students continue to achieve well below white students in most subject areas and at virtually all grade levels (Williams, 1996). Low achievement overlaps significantly with poverty, and poverty often correlates with race. Test score results, schooling expenditure rates, dropout statistics, and related data indicate that many minority students are at risk of academic failure.

Student diversity is in stark contrast to diversity in teaching staff. In 1997, the vast majority of teachers in our schools and teacher preparation programs were white (87%) and female (74%) (American Association of Colleges for Teacher Education, 2002). In 1977, minority teachers constituted approximately 12.2% of the total number of teachers. More recent estimates indicate that the percentage of white teachers in public schools is as high as 90%, meaning that the percentage of minority teachers has dropped as low as 9% (Digest of Educational Statistics, 1998).

Though quality teaching for diverse student populations depends on many factors, there are too few qualified teachers for diverse student populations and too few teachers with specific training in culturally responsive pedagogies. In urban schools with diverse enrollments, districts continue to experience immediate need for special education teachers, bilingual and ESL teachers, and math and science teachers (Haselkorn, 2000). It is important that we synthesize and interpret our best current knowledge about recruiting, preparing, and retaining minority teachers so that we can make the most effective use of policy tools and human resources to meet the educational needs of all of America's children.

As the demographic data indicate, the trend in education is towards a more diverse student (and U.S.) population. But when we set about exploring issues related to minority teacher recruitment, preparation, and retention, we found more questions that needed to be answered. Why are there disproportionately few minority teachers right now? Was this always the case? And, issues of proportional representation aside, why is it so important to have minority teachers as opposed to simply "better qualified" teachers for diverse populations?

Through our search, we found emerging research from multiple sectors[1] indicating that diversity does indeed matter. "Research done in the private sector provides rather compelling evidence about the ways in which diversity enhances organizational effectiveness" (Milem, in press, p. 13). These benefits for businesses include higher levels of creativity and innovation, better problem-solving abilities, and greater organizational flexibility. There is good reason to believe that similar benefits apply to students, teachers, and schools as well. In our review of the education research literature, we found that large-scale studies of the contributions of same-race teachers to majority and minority student achievement are emerging but are still limited in number. On the other hand, there is a body of rich and promising literature—much of it from scholars of color—that offers productive avenues for further investigation.

About This Report

The Northeast and Islands Regional Educational Laboratory at Brown University (LAB) has prepared this review with the understanding that, while there may be much knowledge in practice about minority teacher recruitment, retention, and development, there is still a need to gather and synthesize promising research in order to enable education practitioners and policymakers to identify the most effective programs and practices that encourage more minorities to choose teaching as a career, develop expertise as teachers, and remain in the profession. In addition, it is our intent to provide researchers with provocative questions for further investigation. This report represents the third annual synthesis of research in a series of five proposed to the Institute of Education Sciences at the United States Department of Education. It is intended for a broad audience, including educators, policymakers, and researchers at the national, state, and local levels. Therefore, this review will examine studies within a number of research traditions and with a variety of perspectives—studies that do not frequently appear in the same bibliography.

This approach embodies the belief—expressed throughout a great deal of the research (e.g., Milem, in press; and McAllister & Irvine, 2002)—that diversity of viewpoints will generate increased knowledge and creative ideas for further research. This knowledge and creativity will subsequently enhance student and teacher learning and enrich the national discourse on the significance of diversity in American public life.

[1] Milem's (in press) wide-ranging research summary provides evidence regarding the benefits of diversity at the individual, institutional, and national levels. The summary synthesizes findings from education, critical race theory, and feminist studies, as well as from economics, health policy, law, medicine, organizational behavior, organizational effectiveness, psychology, and sociology.

Selection Criteria

We began by seeking research related to three proposed themes—minority teacher recruitment, preparation, and retention. Our original intention was to select research that was (1) relevant to one or more of the questions asked; (2) published in scientific journals that use independent peer review (two exceptions were made for articles awaiting publication: Smith & Ingersoll, 2003; and Milem, in press); and (3) published within the past two decades (because we found a number of interesting recent studies, we gave preference to research published within the past 10 years). Although we originally intended to focus on United States teacher education, we found it useful to include additional studies from Britain and Canada (Burton, 1993; Burtonwood, 1990; Siraj-Blatchford, 1991; and Solomon, 2001). We also gained many interesting perspectives by reading studies from countries with national policies regarding teaching students of diverse racial, linguistic, and cultural backgrounds.[2]

Because of its potential applicability to the field of education, we also explored research from economics and business literature, where the contribution of diversity to solving problems and increasing productivity has been rigorously researched. One thread of inquiry we followed was to examine the research on patterns of discrimination in the workplace, including job segregation, workplace segmentation, pay differentials, and access to positions of authority. Literature related to this topic is summarized in Appendix A. This material provided strong evidence of widespread patterns of discriminatory practices in many industries.

We also integrated into appropriate sections of this report a small number of business articles (Barton, 2002; Diversity Works, 2003), business and economics studies on the value of diversity (Carranza & Gouveia, 2002), and studies of the teacher labor market (Ingersoll, 1999; Mitchell, Scott, & Covrig, 2000). These studies have implications for minority teacher recruitment and retention and provide interesting models for future education research.

As our search continued, we found relatively recent research that examined issues related to (1) job segmentation in teaching and the job characteristics of the teaching profession (Mitchell, Scott, & Covrig,

[2] See Burtonwood, (1990) for an example.

2000), (2) the effect of different configurations of induction supports on teacher retention (Smith & Ingersoll, 2003), and (3) the effect of same-race teachers on student achievement (Dee, 2001). Studies of this type remain relatively few, but they provide useful information for both program design and further inquiry.

One major change in our thinking as we reviewed the research was a decision to collect not only studies that used strong designs to test research-based hypotheses, as defined by Shavelson and Towne (NRC, 2002), but also rigorous program evaluations, case studies, and interpretive studies whose designs were clear and replicable (e.g., Au & Blake, 2003; Clewell & Villegas, 2001; Dillard, 1994; Dlamini, 2002; Jorissen, 2003; and Milner, 2003[3]). We have also included analyses of national demographic and educational survey data that frame many major issues for discussion and further investigation (e.g., Vegas et al., 2001; and Darling-Hammond et al., 2002).[4]

In our effort to understand the special contribution of minority educators to the learning experiences of both majority and minority students, we have broadened our search criteria to look for promising studies and practices to inform further inquiry. Indeed, searching for them led us to concur with Foster's (1999) argument that the work of minority researchers is relatively marginalized. For that reason, we have actively sought and included the perspectives of minority educators and scholars themselves.

Search Strategies

We identified "candidate" (Wilson, Floden, & Ferrini-Mundy, 2001) studies through database searches, using relevant keywords in the following Web sites and sources: EBSCO/ERIC, NCES, JSTOR (articles from the *Annual Review of Sociology* and *Social Sciences Research*), the *Journal of Negro Education*, and other journals not frequently cited. We also examined bibliographies of key studies and research reviews for further references. We selected studies for inclusion on the basis of their clear designs and their potential contribution to inquiries in less examined areas—such as the contributions of teachers' own cultural knowledge to their effectiveness as pedagogues (Milner, 2003; Milner & Hoy, 2003). In all, we examined more than 300 studies, reports, and articles, and included 233.

[3] For Au & Blake (2003), Dlamini (2002), and Jorissen (2003), see Appendix B - Part II: Question 4. For Milner (2003), see Appendix B - Part II: Question 2. For Clewell & Villegas (2001), see Appendix B - Part II: Question 3.
[4] For Vegas et al. (2001) and for Darling-Hammond et al. (2002), see Appendix B - Part II: Question 3.

The Organization of the Report

The material is arranged to answer the five key questions below, with the addition of a historical review of the condition of minority teachers in the United States that will provide a context for the other findings. Part I consists of a historical summary that explores the condition of the minority teacher in the United States, Part II presents the findings to the five questions that frame our inquiry, Part III presents a complete bibliography, and Part IV provides the appendices.

Questions That Framed the Synthesis

- Question 1. What factors influence minority students' decisions to enter teaching? What does the research tell us about the opportunities or impediments they encounter?
- Question 2. What recruitment strategies and supports are most helpful in encouraging and preparing minorities to enter the teaching profession?
- Question 3. What does the research tell us about the effectiveness of preservice programs designed to prepare minority teachers?
- Question 4. What are the experiences of minority teacher candidates in preservice programs?
- Question 5. What do the available data tell us about patterns of minority teacher retention? What inservice experiences support or discourage minority teachers?

Four Diverse Voices

In the same way that the strongest research shows that diversity enriches practice (Milem, in press), four very distinct personal perspectives inform this review. We believe that the review is enriched by it, although, as a result, the reader will likely find differences of sensibility and style from section to section.

About the Writers

Judith Stern Torres served as project director and lead editor and wrote much of the introduction as well as the material for Appendix A and Question 5. She is an anthropologist and former bilingual teacher with 19 years of applied research and evaluation experience in education. She has coordinated The Education Alliance's work in New York City since 1998.

Janet Santos wrote most of the section on the condition of the minority teacher as well as the Question 1 material. She is a graduate of Brown University and a research associate in The Education Alliance's main office at Brown. Because she was raised in New York City's immigrant community in Washington Heights and attended New York City public schools, she brings a valuable and unique perspective to the work.

Nancy L. Peck provided the material for Questions 2 and 3. She has worked as an instructor and project director at the University of Miami and as director of a regional desegregation and equity assistance center in the southeastern United States. Because she has spent many years helping school leaders implement civil rights law, she has a deep understanding of issues related to equity and access to quality education for minorities.

Lydia Cortes wrote the material for Question 4. She is a highly experienced bilingual and special education teacher, a native-born Puerto Rican, and a product of the New York City Public Schools, where she also worked for 25 years. She is now a consultant, curriculum writer, teacher developer, and published poet.

Part I: The Condition of the Minority Teacher in the United States

In this section we will consider research and scholarship regarding the importance of diversity in education. The first subsection will present a historical analysis of the minority teacher shortage. This subsection will discuss how the lack of commitment to a diverse teaching staff during desegregation contributed to the current state of minority schooling, ultimately affecting the pipeline for minority teachers. The second subsection details factors that have contributed to the decline in the number of minority teachers. The last subsection reviews literature drawn from business and economic research regarding the importance of diversity and discusses why minority teachers are important to our schools. We reviewed a variety of sources for this section, including literature reviews, survey studies, secondary analyses, guides, interpretive case studies, historical analyses, and randomized experiments.

Historical Analysis of the Present Minority Teacher Shortage

Historically, the teaching profession has been of profound importance to African Americans. Prior to the Civil Rights Act of 1964, most college-educated African Americans were in the teaching profession (Cole, 1986; Hudson & Holmes, 1994; Brown & Harris, 1989, as cited in Brown, 1994; Stuart, Meier & England, 1989). In 1954, approximately 82,000 African American teachers were responsible for the education of 2 million African American public school students (Hawkins, 1994, as cited in Hudson & Holmes, 1994). But by 1964, at least 38,000 of the 82,000 African American educators nationwide had lost their teaching positions (Hudson & Holmes, 1994).

Ironically, the underrepresentation of minority teachers seems to have been an unintended side effect of the partial implementation of desegregation following the Supreme Court decision in *Brown v. Board of Education of Topeka, Kansas* (1954). While minority students were transferred in some numbers into majority-white schools, African American teachers were transferred with far less frequency. Apparently, no provisions were made to integrate school faculties, administrations, and staff. Instead, African American teachers and administrators were either dismissed or demoted, and the schools hired white teachers and administrators to deal with the increase in student population (Morris, 1967; Abney, 1974). A 1970 report written by the National Education Association Task Force III entitled *School Desegregation: Louisiana and Mississippi* (cited in Arnez, 1978), found that the new position of "sub-principal" created for African American administrators paled in comparison to the more powerful positions created for whites, which

included "curriculum supervisor, area principal, supervising principal, and curriculum coordinator. Central office positions given to African Americans were frustratingly lacking in decision-making authority" (p. 40).

The task force report (as cited in Arnez, 1978) also revealed that between 1965 and 1969, LaFourche Parish, Louisiana increased its employment of African American teachers by just four. During the same time period, it increased the number of white teachers it employed by 163. Between 1968 and 1970, the number of African American teachers in Lafayette County, Mississippi decreased from 59 to 30, and Meridian, Mississippi dismissed 17 African American teachers in 1970, but hired five new white teachers.

Morris's (1967) analysis of the employment trend of African American teachers in Kentucky found that 86.7% of the African American teachers still teaching after the integration of the school system were covered under the state's tenure law, which dictated that teachers who had worked for a period of four years in a school district would automatically be given a contract to continue their jobs. In 1955, the Kentucky Department of Education reported the employment of 1,440 African American teachers and the matriculation of 39,788 African American students in its public school system. Between 1955 and 1965, the African American student population increased to 55,215. According to Morris's calculation, in order to maintain representation of African American teachers in proportion to the African American student population, approximately 401 African American teachers should have been hired. Instead, 41 African American teachers lost their jobs during the desegregation process.

Northern school systems faced the same problem as their Southern counterparts. School districts in both locations failed to hire a number of African American teachers proportionate to the number of African American students. Between 1970 and 1972, New York City's teacher population grew from 400,000 to 542,000. During that time, the African American teacher population grew from 7,054 to 7,461. However, for New York City to maintain a number of African American teachers proportionate to African-American students, the city would have had to hire approximately 16,000 African American teachers. Instead, African American teachers accounted for only 407 of the new hires during that two-year period (Carter, 1982).

Other issues also worked to greatly limit the number of African American teachers in the profession. The topic of teacher testing and certification in its present context is discussed further in Part II of this document under Question 3, which deals with preservice programs designed to prepare minority teachers.

Salary Differentials and Other Conditions of African American Employment in Teaching

African American teachers were engaged in struggles for equality even before the *Brown v. Board of Education* case was brought before the Supreme Court. Throughout the 1930s and 1940s, the NAACP, with the support of African American teachers nationwide, brought forth lawsuits challenging the salary disparities between white and African American teachers. Teacher salary schedules were determined by a formula that considered (1) level of education attained, (2) years of experience, and (3) grade level taught. Most school systems in the South maintained two separate salary schedules—one for white teachers and the other for African American teachers. Officials explained the salary disparity using the economic law of supply and demand. In other words, "in contrast to white teachers, African American teachers had fewer employment options, and were willing to teach for less" (Beezer, 1986, p. 201). The average white teacher earned $910 per month, whereas the average African American teacher earned $510. Overall, nationwide, white teachers earned about 80% more than African American teachers (Beezer, 1986). The goal of the NAACP salary equity campaign was to eradicate the unequal schedules that existed for African American and white teachers.

The situation of the African American teachers was further exacerbated by their limited economic and professional opportunities. African American teachers were, for the most part, restricted from teaching at the secondary school level. In many Northern and Southern cities, secondary school positions, where salaries were higher than those in elementary or middle school, were unavailable to them.

History of Teacher Testing After Brown v. Board of Education

According to Baker (1995), the National Teacher Examination (NTE) was developed during the NAACP's salary equity campaign, which succeeded in such cities as Norfolk, Virginia and El Paso, Texas during the late 1930s and 1940s. After *Brown v. Board of Education* called for the integration of the schools, Southern school boards recruited developer Ben Woods to help them devise a test that would allow salary to be

determined by a teacher's ability and not by legislation. When he was asked to summarize how African American and white teachers would fare on the exam, Woods stated that most African American teachers would score below the white teachers (cited in Baker, 1995, p. 60).

The development and use of teacher certification exams accelerated at a remarkable pace following the *Brown v. Board of Education* decision. In 1956, the Educational Testing Service (ETS) reported an increase of 65% from the previous year in the number of teachers being required by city and municipal governments to take teacher exams (Baker, 1995). ETS annual reports from the latter part of the 1950s revealed that "by 1959, teachers and principals in almost every major Southern city—including Baltimore, Washington, D.C., Richmond, Raleigh, Charleston, Atlanta, Miami, Montgomery, New Orleans, Nashville, St. Louis, Tulsa, and Dallas—were encouraged or required to take the NTE." State departments of education in West Virginia, North Carolina, South Carolina, Georgia, and Florida had made the tests a mandatory part of the teacher certification process.[1]

The NTE was sold as an "impartial" means of determining teacher salary. Because the results of these tests could then be used to eliminate minority teachers after the integration of the school systems, their use was contested in court. However, their use was declared legal despite the fact that the validity of the exams in demonstrating teacher competency was never proven (Baker, 1995, p. 61). In a September 15, 1970 memorandum to the National Education Association's staff ad hoc committee on the National Teacher Examination, Boyd Bosma revealed that the NTE was being used by local and state boards to determine teacher salaries, pay raises, evaluation, certification, and retention. Bosma also noted that the test had a disclaimer, which stated that it was not intended to measure teacher competency (Arnez, 1978). Other requirements affected the number of minority candidates for the teaching profession. According to Smith (cited in Hudson & Holmes, 1994), "between 1984 and 1989, an estimated 37,717 minority candidates and teachers—including 21,515 African Americans—were eliminated as a result of newly installed teacher certification and teacher education program admission requirements" (p. 389).

[1] Data based on the Educational Testing Service Annual Reports: 1953-1954 (p. 53, 63); 1954-1955 (p. 70); 1955-1956 (p. 91-92); and 1959-1960 (p. 36, 58-59).

When desegregation was implemented, African American administrators, teachers, and parents were given a significantly reduced role in strategizing and instituting plans for full integration. Both Morris (1965) and Stewart, Meier, and England (1989) proposed explanations for the disproportionate displacement of African American teachers during this time. The cause of the displacement, they explain, lay in white people's belief that African Americans were not qualified to teach their children; school officials reacted to this prejudice by displacing African American educators (Stewart et al., 1989). "Prejudice, narrowness, and biases on the part of community leaders who form the informal and formal power structure of communities … dictat[ed] in large measure the actions of school boards and superintendents" (Morris, 1965, p. 75).

Estimations of Loss

The policies that emerged as a result of the *Brown v. Board of Education* decision did not include the input of African American parents, teachers, and administrators—yet these policies have greatly affected the subsequent quality of the education received by minority students. Arnez (1978) identified the negative consequences of these policies as the following: (1) the loss of teaching and administrative jobs by African Americans through dismissals, demotions, and displacement; (2) the loss of millions of dollars in projected earned income; (3) the loss of racial models, heroes, and authority figures for African American children; (4) the loss of cherished school symbols, colors, emblems, and names of schools by African American children when their schools were closed and they were shifted to white schools; (5) subjection to segregated classes and buses, and exclusion from extracurricular activities; (6) disproportionate numbers of African American students suspended, expelled, or pushed out of school; (7) exposure of African American children to hostile attitudes and behavior of white teachers and parents; (8) victimization by forced one-way busing policies and the uprooting of African American children for placement in hostile school environments without any support systems; (9) victimization by misclassification in special education classes and track systems; (10) victimization by unfair discipline practices and arbitrary school rules and regulations; (11) victimization by ignorance of their learning styles, culture, and social, educational, and psychological needs (p. 29); and (12) victimization by lack of exposure to an inclusive curriculum.

African American Teachers' Narratives

When African American teachers were offered employment in the newly "integrated" schools, they found that the schools had been internally resegregated: African American teachers were assigned to teach only African American students. Foster (1990) conducted a qualitative study in which she interviewed 16 (12 female and 4 male) African American teachers about issues of race in education, using an open-ended life history approach. Their experiences illuminate the larger story. For example, Ella Jane's story after integration involved transfer for both her and her cousin to an all-white school. But, because white parents didn't want them teaching their children, the two teachers, who held master's degrees, spent their days in empty classrooms without any students to teach. When the white teachers complained about their not teaching, the school reacted by creating remedial classes with 9 to 12 students for them. All of the students in these classes were African American. Ella Jane said, "Everywhere African Americans were getting flak, and it was harder after integration for us to get jobs" (pp. 131-132).

Accompanying the end of segregation was the belief that the African American schools had been inferior. Lisa Delpit (1992), who was educated at an African American school, mentioned that one of the fallacies to arise from the post-Brown era erroneously equated African American students' substandard facilities with a substandard education. Delpit recounts how the African American nuns at her elementary school focused their efforts on teaching standard English grammar. When she arrived at her graduate program at a prestigious school and informed professors of her elementary school's physical condition, they often commented that she wrote surprisingly well.

The elimination of the African American school and the loss of African American teachers were deemed acceptable due to the supposed inferior quality of both. However, the reduction in the numbers of African American teachers immediately following desegregation resulted in the loss of specific pedagogical skills that had been effective in educating prior generations of African Americans. When African American schools closed, the quality of teaching and the degree of concern for students' welfare appears to have diminished. King (1993) stated that African American educators possessed a teaching philosophy and pedagogy "which may build upon cultural preferences related to teaching and learning." These educators were "role models, surrogate parents, disciplinarians, counselors, and advocates" (Hudson & Holmes, 1994).

Reasons for the Underrepresentation of Minority Teachers Today

Inadequate academic preparation

Urban and rural schools have the hardest time recruiting and retaining qualified teachers. As a result, underqualified teachers or those with emergency licenses work disproportionately in high-poverty and urban schools (U.S. Department of Education, 1998). Because students in high-poverty schools are less likely to be taught by a qualified teacher (Ingersoll, 1999), they may be underprepared for higher education.

Recruiting New Teachers (2000) pointed out that, although poverty is not a problem unique to racially and ethnically diverse populations in this country, almost half of the children from racially, ethnically, and linguistically diverse families in the U.S. are poor. Many minority children attend poor, underserved schools where poverty and dropout rates are high and achievement rates are low.

The attraction of other careers

The demand for talented people in private industry is great in fields with chronic teacher shortages, such as math and the physical sciences (Claycomb & Hawley, 2000). Minority students entering college are attracted to business, science, or math degrees that can lead to more lucrative jobs in the future. Overall, minority interest in a teaching career declined from 19.3% in 1970 to 6.2% in 1985. This interest continues to decline (AACTE, 1992).

Unsupportive working conditions

Poor conditions, low salaries, crowded classrooms, and students' lack of respect for teachers discourage minority and white students alike from the teaching profession (Darling-Hammond, Pittman, & Ottinger, 1987, as cited in Fenwick, 2001). Teachers, particularly in urban areas, often contend with the lowest student achievement levels, the highest dropout rates, the lowest amount of teacher resources, the highest number of discipline problems, and the lowest levels of teacher control over curricular and pedagogical decisions.

Lack of cultural and social support groups

It is important to have cultural or social support groups in teacher preparation programs and in the communities in which preservice students will eventually teach. The lack of such support, particularly in

rural or suburban placements, either prevents minorities from applying or causes them to leave after one or two years (Pesek, 1992). Fenwick (2000) contended that communities without minority associations or other minority teachers will have difficulty attracting new minority candidates. Teachers coming directly from college expect to enjoy some sense of bonding with colleagues of their own culture.

Increased standards and competency testing

Increased standards and competency testing for teachers have been cited for contributing to the minority teacher shortage. Data suggest that minorities consistently score lower than whites on standardized tests for entry into teacher preparation and teacher licensure programs (Gitomer, Latham, & Ziomek, 1999). Many claim that the teacher examinations are biased and lack validity, and others urge the addition of performance-based testing, which is more closely related to effective teaching. Few want to lower standards. Kreitzer (1987) maintained, "teacher tests, and the manner in which scores are being set, are differentiating among candidates far more strongly on the basis of race than they are on the basis of teacher quality" (see also the discussion in Part II, Question 3 regarding the effects of mandated assessment and licensure examination on minority teachers).

Financial considerations

Low salaries affect both the recruitment and retention of teachers and may discourage the most academically talented college graduates from pursuing careers in teaching. Teachers' salaries and benefits are considerably lower than those of other careers that attract college graduates, and the salary gap widens with years of experience (*Education Week*, January 2000). Darling-Hammond et al. (1996) also suggested that increased opportunities and financial incentives lure talented and qualified minority students away from the teaching profession.

High attrition rates among minority teachers

Over the last ten years the attrition rate for minority teachers has averaged about 10% annually, and in 1995-1996 the average age of teachers was 46. At the same time, 30% of African American teachers were over 55, suggesting that attrition is likely to rise at a higher rate for them than for other teachers. The aging of the teacher workforce implies that the demand for new teachers is likely to increase dramatically in the next few years as retirement increases the teacher shortage (Kirby et al., 1999).

Estimating the Individual, Economic, and Social Value of Diversity

Major employers have often been the first to recognize and value the economic contributions of minorities. Policy reports by the Diversity Pipeline Alliance[2] and the Business-Higher Education Forum[3] pointed with alarm to a large and growing long-term labor shortage, projected on the basis of U.S. Census and Bureau of Labor Statistics data (Diversity Pipeline Alliance, 2002). Both reports emphasized the urgency of engaging the diverse talents of young people in order to grow the country's economy in the future.

A January 1, 2002 press release from the American Council on Education argued that the education of racial and ethnic minorities has not equipped them to contribute fully to the economy of the future, thereby creating a "crisis of workforce skills and knowledge." As evidence, the report voiced concerns about the underrepresentation of African Americans and Hispanic Americans in higher education, the number of students from those groups completing bachelor's degrees, and the declining minority representation in business bachelor's degree and MBA programs specifically (Diversity Pipeline Alliance, 2002).

Milem (in press) discussed how better education for minorities could address the above concerns; it would benefit the economy as a whole; increase on-the-job creativity, innovation, and problem solving; provide varying viewpoints on issues; and result in development of new products and services. Milem conducted a comprehensive multidisciplinary review and analysis of research that examined the benefits of diversity for individuals, institutions, and society as a whole. He drew from research in various domains (such as economics, higher education, law, health policy, medicine, and organizational behavior and effectiveness) generated in response to legal challenges against the use of race in college admissions. Literature from the field of education provided evidence as to how student heterogeneity "enriches the educational enterprise" (ch. 5, p. 1) of the university by encouraging discourse among diverse students or "interactions with difference" (ch. 5, p. 4). Among the benefits reported in the education research are learning outcomes (engagement in instruction and refinement of intellectual skills); democracy outcomes (preparing

[2] The Diversity Pipeline Alliance is an organization of nonprofits funded by major corporations, professional associations, and foundations concerned with increasing minority representation in education.
[3] The Business-Higher Education Forum is an advocacy group composed of executive officers from major corporations and presidents of leading universities.

students to participate in diverse communities); increased engagement in citizenship after college; racial and cultural engagement that increases levels of cultural awareness and appreciation of differences; and increased compatibility across differences. The results were visible not only in students' engagement on campus but in increased critical thinking skills, educational attainment (and income), and levels of civic responsibility after graduation. It remains to be seen if similar findings hold for students in elementary through high school.

Milem's review also pointed to lessons and implications for organizations, noting that organizational diversity provides multiple benefits, including enhanced creativity, individual productivity and innovativeness, and improved organizational performance. These benefits were specifically linked to the fact that groups with minority members were more likely to be innovative in solving problems because they bring a greater variety of perspectives and alternatives. Echoing the findings of Smith (2002), Milem noted that supporting a diverse workforce demands that organizations be purposeful and deliberate in how they increase diversity.

Why Minority Teachers? Special Characteristics and Contributions

Dee (2001) analyzed achievement test scores from Tennessee's Project STAR, a statewide, large-scale, randomized experiment designed to systematically explore the relationship between class size and achievement over a four-year period; his analysis provided strong evidence that having a teacher of the same race supports increased student performance on statewide standardized achievement tests. Achievement data for African American and white, non-Hispanic students were collected under three classroom conditions—small classes, regular-sized classes, and regular-sized classes with teacher aides. Random assignment of teachers and students, as well as use of data on key teacher and student characteristics allowed researchers to control for many confounding variables[4] and possible alternative hypotheses.[5] Despite student attrition over the four years, analyses indicated that the effects of class size were substantial.

[4] For example, by comparing alternative class sizes within school contexts rather than across different contexts, and controlling for potential bias in estimated teacher race effects due to unobserved dimensions of teacher quality.

[5] Such as unmeasured teacher preferences or bias toward particular types of students.

The results indicated that, for both African American and white students, achievement gains were related to assignment to a same-race teacher, and these results were concentrated in the most segregated schools. It was also observed that the effect of a same-race teacher was less in small classes. However, overall, "assignment to an own-race teacher was associated with large and statistically significant achievement gains for both black and white students" (Dee, 2001, p. 19). This held true in each year, and the effect increased over time.

The researchers noted that the results do not point to the ultimate desirability of same-race assignments and cannot be used to determine long-term outcomes. The results also do not "provide meaningful evidence on the exact mechanisms by which own-race teachers might actually influence student achievement (i.e. the varying types of passive and active teacher effects)" (p. 22). The researchers noted that this work offers only "provocative hints that these racial interactions … interact in important ways with other student, teacher, classroom, and school traits" (p. 22).

In an earlier study, Ehrenberg, Goldhaber, and Brewer (1994) attempted to examine the relationship that teacher race and ethnicity had to student performance. In this study, the teacher's racial and ethnic background was found not to affect student performance. However, teachers' racial and ethnic backgrounds did seem to influence their subjective evaluations of their students, with teachers giving higher evaluations to same-race students. This was true for both African American and white teachers. The researchers suggested that there might be some aspect of the teacher's empathy and support that could encourage students to perform better. Despite its somewhat contradictory findings, the more sophisticated and rigorous design of Dee's study holds more validity than Ehrenberg et al.'s earlier findings.

Directly or indirectly, minority teachers serve as mentors, role models, disciplinarians, advocates, cultural translators, and surrogate parents for minority students (Ladson-Billings, 1994, as cited in Ford & Gotham, 1997). Hess and Leal (1997) asserted that higher percentages of minority faculty were associated with higher college matriculation rates for urban students, although the mechanism for that finding was not clear. The limitation of their study may be that the percentage of minority teachers is just a proxy for an unidentified related factor affecting college matriculation rates. However, Hess and Leal's conclusions

are consistent with the existence of the role-model hypothesis, as minority faculty resulted in a greater percentage of minority students enrolling in postsecondary institutions.

It is possible that there are as yet unidentified understandings and behaviors beyond the role model hypothesis that contribute to the unique pedagogical practices of minority teachers. Several qualitative case studies have alluded to these understandings and behaviors in the instructional practices and curriculum development of teachers. Minority teachers are more than teachers in the traditional sense. Milner (2003) demonstrated this concept in a case study of how an African American female teacher utilized what Milner termed her "cultural comprehensive knowledge" to provide more effective instruction to her students. This cultural comprehensive knowledge is composed of a person's cultural and gendered understanding of their experiences and how that understanding alters their worldview. Reflection about this knowledge in turn influences their instructional planning and decision making. Similar sentiments were also expressed by African American teachers in other settings (Foster, 1993).

Minority teachers cite knowledge of community and the world as one characteristic that distinguishes them and informs their practice and effectiveness. The African American teachers cited as exemplary by Foster (1993) mentioned how important they felt it was to provide African American students with an understanding of their role in the community and the world. Monzó and Rueda's (2000) study of Latino paraeducators showed that they helped expand students' comprehension of the world. They were able to form close relationships with students and their families because they usually resided in the same community as the students and spoke the students' native language. Moreover, they acted as bridges between the home lives of the students and their experiences in school and demonstrated much empathy and support for the students.

This extra understanding and the resulting ability to provide guidance is what may be missing with many white teachers of minority students. As Tettegah (1996) pointed out, white teachers do not often share this level of understanding regardless of whether or not they have already engaged in some self-reflection. In her analysis, Tettegah found that, despite their level of racial consciousness, the majority of the white prospective teacher candidates generally rated African American and Latino students as possessing lower cognitive skills than whites and Asian Americans.

These findings parallel Delpit's conclusions (cited in Kestner, 1994); she noted that teachers might misunderstand or misinterpret the behavior of minority students and deprive them of appropriate instruction by labeling them as special education or simply not understanding and valuing the diverse understandings and learning styles that they bring to the classroom.

Weaknesses and Gaps in the Research

Clearly, we need to know more about the kinds of cultural knowledge and understandings that minority teachers bring to the classroom. These might include understanding the patterns of adult authority and discourse with children in particular social and linguistic contexts, the community aspirations for children, and the accepted forms of interaction with elder community members and other racial and ethnic groups. Using intensive case study material and observational data, classroom teachers could be coached in using and field-testing specific strategies in varied classroom settings. With systematic documentation and field testing, this work could be disseminated and replicated widely.

Given the literature describing minority teachers' "cultural comprehensive knowledge" (Milner, 2003), we suggest case studies and content analyses of minority teachers' personal narratives to identify 1) styles of communication between adults and children, 2) standards of behavior as individuals or in groups, 3) valued cultural knowledge, 4) knowledge of children's communities, 5) goals for children's learning, and 6) the forms and content of empathetic behaviors (McAllister and Irvine, 2002). Thematic analysis of videotaped lessons would be helpful in developing a clearer understanding of key behaviors and cultural understandings in context. These understandings could be used as materials to develop scenarios, that could then become the basis for a survey of various samples of teachers of diverse backgrounds (varying by teachers' race and ethnicity and that of the students). Subsequent analysis of survey findings would allow for the generation of new hypotheses about the unique characteristics of diverse teachers' instructional planning, classroom management, styles of interaction, and effective instructional practices. In turn, these findings could be used to create design research studies examining these practices in varied settings. These findings could also make a meaningful contribution to the content of pre- and inservice education for all teachers.

Part II: Research Questions

Question 1: What factors influence minority students' decisions to enter teaching? What does the research tell us about the opportunities or impediments they encounter?

In this section we examine the question of who aspires to teach and who actually becomes a teacher. First, we present a list of the personal factors identified in occupational choice literature as determiners of the career decisions of African Americans, Hispanics, Asian Americans, and Native Americans. Second, we examine the reasons minorities choose to enter or not enter the teaching profession. Third, we analyze the occupational characteristics of teaching and why its organizational culture attracts persons possessing particular character traits. We then conclude this section with a description of the minority teacher pipeline and an assessment of how minorities fare along that pipeline.

For this section we included a total of 17 studies. Among them were six literature reviews, three case studies consisting of semi-structured interviews, five analyses of regional survey data, and two studies utilizing samples from a national database. Finally, we included a systematic review of the teacher labor market conducted as part of the planning process for a beginning teacher induction support program in the state of California.

Literature on Occupational Choice Theory

Theories on occupational choice and career development emerge from the field of labor economics; these theories attempt to unearth the motivations behind individuals' vocational interests and pursuits. Theories on career choice and development have historically been derived from studies sampling white, middle-class males and thus do not address the impact of race, ethnicity, and culture on the decision to enter teaching or on career choice in general.[1]

[1] Occupational choice theories reviewed for this document were: (1) Parsons's trait and factor theory, (2) Super's theory, (3) Holland's theory, and (4) social learning theory.

Furthermore, as Brown (1995) and Oliver (1988) showed, these established theoretical frameworks seldom address the minority perspective, nor do they address discriminatory labor practices against racial and ethnic minorities. The vocational assessment instruments and procedures of the more prominent occupational choice theories have not been tested extensively on African American, Hispanic, Asian American, and Native American populations (see Arbona, 1995; Johnson, Swartz, & Williams, 1995; Leong & Serafica, 1995; and Brown, 1995). Hence, their validity with minority groups has not been explored (Leong, 1995). Another theme emerging from these investigations is the need for existing and recently developed occupational choice theory to account for variability between and within racial and ethnic groups.

Factors That Influence the Occupational Choices of Minorities

There has been some research testing vocational assessment instruments on minority populations; these tests indicate the factors listed below as significantly affecting the occupational choices of African Americans, Hispanics, Asian Americans, and Native Americans. Unlike the occupational choice theories, these factors do account for between- and within-group differences.

1. **Socioeconomic status (SES).**

2. **Degree of acculturation.** "Acculturation is most often used to refer to the process by which immigrants adapt to the socio-cultural and psychological characteristics of the host society. Level of acculturation is often interpreted as a measure of the person's capacity to function in the larger society" (Keefe & Padilla, 1987, as cited in Arbona, 1995). For Native Americans, an indicator of acculturation is the extent of their participation in tribal traditions and culture (Johnson, Swartz, & Williams, 1995). For language minorities, acculturation is also measured by English language proficiency (Arbona, 1995). In our analysis, acculturation is defined by the amount of mainstream American culture a person has adopted into their belief system.

3. **Racial or ethnic identity.** For Native Americans, this also includes tribal affiliations (Johnson, Swartz, & Martin, 1995).

4. **Appearance based on phenotype.** Physical attributes often contribute to discrimination. Mexican Americans and Puerto Ricans with a more European phenotype were found to have higher socioeconomic status than their darker peers (Arce, Murgia, & Frisbie, 1987, as cited in

Arbona, 1995). Research conducted before and during the civil rights movement indicated that higher status African Americans tended to have lighter skin tones than those of lower socioeconomic status (Keith & Herring, 1991; Myrdal, 1944; and Ransford, 1970, all cited in Brown, 1995).

5. **The educational attainment of parents and the individual.** Educational attainment is listed as a separate category because many immigrants who achieved high levels of education in their native countries must settle for lower paying occupations in the United States.

6. **Self-efficacy.**[2] Self-efficacy refers to an individual's belief in his or her ability to successfully accomplish a context-specific goal (Bandura, 1977 and 1986, as cited in Brown, 1995). According to the principles of self-efficacy, individuals are attracted to and engage in activities in which they believe success is immanent; meanwhile they avoid tasks where they perceive their success unlikely.

   Understanding self-efficacy is vital to the goal of developing a diverse teacher force. Self-efficacy influences the choices a person makes, the effort they choose to invest, their resilience in pursuit of their goals, and their level of confidence.

   Due to the teaching profession's long preparatory pipeline (the minority teacher pipeline is discussed later in this section), there are greater opportunities for a candidate to encounter negative experiences with the teaching profession.

   Research suggests that becoming a teacher requires a high sense of self-efficacy for the following reasons:

   (1) To make the decision to pursue teaching. Self-efficacy was found to play an integral role in the career decisions of African Americans (Picou, Cosby, Lemke, & Azuma, 1974, as cited in Brown, 2002).

[2] For a more in-depth description and the latest research findings on self-efficacy, consult Emory University's self-efficacy site at http://www.emory.edu/EDUCATION/mfp/self-efficacy.html. The site features research on teacher efficacy; self-efficacy and career choice; and the impact of race, ethnicity, and culture on self-efficacy.

(2) To complete high school, undergraduate, and graduate coursework and/or fulfill certification requirements. Research has proven that self-efficacy impacts the academic performance of Hispanic students (Church, 1992; Hacket et al., 1992, as cited in Arbona, 1995). In their individual case study of an African American teacher, Milner and Hoy (2003) found a link between a teacher's sense of self-efficacy and student achievement. Their findings supported those of an earlier study (Ashton & Webb, 1986, as cited in Evans, 1989) which found that students assigned to teachers possessing a high sense of self-efficacy tended to make greater gains in mathematics, language, and reading than students of teachers with low self-efficacy (Evans, 1989).

(3) To navigate the school environment and stay in the profession (the issue of retention is addressed in Question 5).

7. **Amount of experienced discrimination** (Arbona, 1995; Leong & Serafica, 1995). The lengthy teacher pipeline contributes to the probability that minority teacher candidates will experience episodes of professional discrimination. Discrimination is related to and interacts with the previous items on this list. Men and women may experience differential discrimination; people with limited English proficiency may also experience discrimination. Fear of discrimination can influence someone to take work in areas where his or her ethnic or racial group is prominent. For instance, many Asian Americans are attracted to careers in the physical sciences, technical fields, and business, and are less oriented toward the language-dependent careers in the social sciences, communications, and the arts (Sue & Kirk, 1972; Hsia, 1988, both cited in Leong, 1995; Gordon, 2000).

In an interpretive study about the role of cultural values in the occupational choices of individuals, Brown (2002) concluded that these values impact occupational choice, job satisfaction, and professional success. He defined *values* as ideas guiding how individuals should conduct themselves and make decisions. *Cultural values* were described as values universally held by a certain cultural group. Unfortunately, the relatively few studies examining the factors of race, ethnicity, and culture in occupational choice limit our understanding of the extent to which they affect the career choices of persons of Asian American, African American, Native American, and Hispanic descent.

Reasons Minorities Enter Teaching

Level of Interest in Teaching by Minorities

Several studies (Mitchell et al., 2000; Vegas et al., 2001) identified attrition—not lack of interest—as the reason for the shortage of African American, Native American, Hispanic and Asian American teachers. These groups tend to drop out of the education system before getting to or through the teacher pipeline. In fact, in their survey of Nevada high school seniors, Summerhill, Matranga, Peltier, and Hill (1998) found a high level of interest in a teaching career in male Native American and African American high school seniors as well as in female Asian American and Hispanic students. Also suggestive of this high interest in the Latino community is their high enrollment rate in education courses (Mitchell et al., 2000). Interestingly, despite the high concentration of Asian Americans in technical fields and their low representation in the teaching profession, Leung, Ivey, and Suzuki (1994) established through a comparative analysis of occupational choices that Asian Americans were as attracted as their white counterparts to social occupations such as teaching and counseling.

The interest expressed by minority students in social professions such as teaching indicates that recruiting minority students is not just a matter of augmenting general interest in the profession. Rather, the challenge lies in preparing a wider pool of well-prepared minority students who can then be recruited into a long-term career in teaching. If more minorities were successfully completing high school and college, the problem of underrepresentation would be of less concern (Vegas et al., 2001). In the meantime, the insufficient supply of minority candidates means that teaching will continue to compete with other professions for qualified minority graduates.

The Attraction of Service

Survey data obtained from Shipp (1999) and King (1993) recognized the role of service in attracting minorities into teaching. Shipp conducted a comparative survey study of 263 African American undergraduate students pursuing both education and non education degrees at both predominantly white institutions of higher education (110 participants) and historically black colleges and universities (153 participants); he found that African American education majors placed greater significance on the service component of the profession. African Americans pursuing non education degrees placed more relevance on extrinsic factors such as salary and possibilities for advancement in their occupational field.

Hanushek and Pace (1995) drew similar conclusions from their analysis of data obtained from the National Center for Educational Statistics' longitudinal High School and Beyond survey. Hanushek and Pace found that salary did not play a powerful role in influencing students' decisions to pursue teaching as a career. However, data were not disaggregated for different racial and ethnic groups.

King's (1993) findings and Shipp's findings were similar. In a survey examining the factors influencing the decision to enter teaching, approximately 83% of 41 beginning (inservice) and prospective African American, Caribbean American, and African teachers reported being attracted to teaching because of the opportunity to work with young people.

The Attraction of Social Justice

The attraction of working toward social justice to minorities choosing careers in teaching is apparently related to number 7 on the list of factors influencing the occupational decisions of minorities, "the amount of discrimination experienced." Although teaching candidates in general reported being drawn into the profession for its altruistic nature (Summerhill et al., 1998), minority candidates were also attracted to teaching's potential for social transformation (Su, 1997; Foster, 1990; and King, 1993).

In a case study of Asian American, African American, and Hispanic teacher candidates enrolled in a one-year MAT program, Su (1997) noted through surveys and pre-constructed interviews that minority teacher candidates expressed an awareness and "concern for the conditions of education for the poor and minority children and what they could do for them as teachers" (p. 331). Most minority students were attracted to the teaching profession because of the inequalities they found within the education system; they entered the profession with the intent of remedying existing imbalances. Leonard Collins, a novice African American teacher featured in a case study conducted by Foster (1997), expressed a similar social consciousness: "If we were truly integrated, the education we receive in elementary school would be comparable to that of whites" (p. 180). Furthermore, Collins and one third of the minority teachers featured in the Su (1997) study believed teachers should challenge the curriculum and the dominant culture that it promotes. Su reported the absence of these sentiments in the responses of white survey participants (p. 329). The responses of the minority candidates were indicative of how their personal experiences informed their perspectives as teachers (Quartz et al., 2003; and Milner & Hoy, 2003).

For the second part of the investigation, Su asked a sample of 112 (68 white and 44 minority) teacher candidates to align themselves with a particular philosophy of school regarding the purpose of school and education. Descriptions of the four philosophical schools were adopted by Su from Sirotnik's (1988) study. (Results of this inquiry are presented in Table 1). Statistics from Table 1 demonstrate that both groups' responses clustered around the central progressive and liberal categories, with minorities aligning themselves more with the liberal and critical philosophers than their white peers did. The majority of white students (52%) identified with the conservative and progressive schools, while approximately 66% of the minority candidates aligned themselves with the liberal and critical philosophies of schooling.

TABLE 1: Philosophies of School

PHILOSOPHY	DEFINITION	DISTRIBUTION OF SAMPLE IN SCHOOL PHILOSOPHY SURVEY	
		WHITES (n=68)	ALL MINORITIES (n=44)
Conservative	**The purpose of school is to prepare young people to take their place in society and to maintain order and stability within the society.**	**6**	**0**
Progressive	**The purpose of school is to sharpen the skills, interests, and talents of students to the fullest extent.**	**29**	**15**
Liberal	**The purpose of school is to prepare students to become socially conscious of the human condition and to participate in improving society.**	**24**	**21**
Critical	**The purpose of school is to prepare students to confront the injustices of society and to create a more equitable society.**	**9**	**12**

Source: Su, Z. (1997). Teaching as a profession and as a career: Minority candidates' perspective. *Teaching and Teacher Education, 13*(3), 324-325.

Reasons Minorities Do Not Enter Teaching

Acculturation and Perceptions of Teaching in Minority Communities

Some studies have found a high regard for the teaching profession in many communities of color (Gordon, 1997; Gordon, 2000; and Foster, 1997). Part I of this review of literature addressed the high status traditionally conferred upon teaching in African American communities. Gordon (2000) emphasized the high status bestowed upon teaching in the homelands and traditional cultures of Asian Americans. Using a two-phase study, Gordon (2000) examined the changing perception of the teaching profession within the Asian American community in California. The investigation concluded that the stature conferred upon teaching in traditional Asian cultures created a sense of personal inadequacy among Asian Americans. Students expressed concern that they could never live up to the near perfection expected of teachers in many traditional Asian cultures.

However, the perception of teaching within communities of color was also found to vary based on the extent of acculturation. In her qualitative study, Gordon (1997) compared new immigrants' views of the profession to those people who have lived in the United States for a longer period of time. Relying on semi-structured interviews with 114 teachers of color[3] over a two-year period, Gordon (1997) found that the more acculturated a racial and ethnic group became, the more they had adopted the mainstream perception of teachers, and consequently, the less enticed they were to enter the teaching profession. As we have mentioned on several occasions, teaching has historically been highly regarded within the African American community. However, about half of the African American teachers interviewed by Gordon (1997) attributed teaching's fall in status within the African American community to the integration of the African-American and white school systems.

Teaching's Lack of Prestige and the Minority Teacher Supply

What constitutes a prestigious profession? Prestige emerged as a common theme present in studies examining minorities in teaching. Professional prestige was repeatedly linked to the earning potential of

[3] The 114 teachers of color (14 Hispanics—7 men and 7 women; 81 African American—24 men and 57 women; 10 Native American—4 men and 6 women; 9 Asian American—4 men and 6 women) teach grades K-12 in three urban districts located in Cincinnati, Ohio; Seattle, Washington; and Long Beach, California.

the profession (Foster, 1997; Su, 1997; Leung, Ivey, and Suzuki, 1994). In a case study of Ashallah Williams, a new African American teacher, Foster (1997) mentioned how Williams was encouraged to consider more prestigious professions—such as engineering, medicine, and computer science—by members of the community and her high school teachers. According to Williams, prestigious professions meant "lucrative careers like medicine, engineering, and computer science … They [her high school teachers] believed that a young African American girl who was good in science and math shouldn't waste her time in teaching" (p.183-184).

Su (1997) also found that relatively low financial compensation contributed to the low social status of the profession. In spite of the specialized professional training required to become a teacher, society did not recognize it as comparable to law and medicine because the earning potential was not comparable.

Prestige, status, and acculturation. The interrelationships between acculturation and prestige are crucial to understanding the occupational choices of minorities. Prestige plays a prominent role in diverting high academically achieving members of minority groups from the teaching profession (Foster, 1997; Leung et al., 1994). As Gordon (1997) noted, the longer immigrants are in the United States, the more likely they are to have adopted the mainstream's negative perception of teachers. In their comparative study of the occupational choices of Asian Americans[4] relative to those of their white counterparts, Leung et al. (1994) found that minorities pursue more prestigious professions when they try to establish themselves and assimilate into mainstream society. As a result, Asian Americans were more attracted to careers in research compared to their white counterparts because of the high esteem attached to those careers. "The need

[4] The Asian American sample group consisted of 149 undergraduate students (52 men and 97 women) attending a major university on the West coast. Forty-four were Chinese (16 men and 28 women), 12 Filipino (7 men and 5 women), 21 Japanese (3 men and 18 women), 34 Korean (10 men and 24 women), 29 Vietnamese (10 men and 19 women) and 9 (6 men and 3 women) from other Asian countries (e.g., India and Pakistan). Forty-nine subjects in this sample group were born in the United States, and the remainder of the group had resided in this country for an average of 10.4 years. The study analyzed the "personality structure hypothesis" and "the prestige hypothesis" developed to explain the reasons behind the occupational choices of Asian Americans. The third hypothesis tested the role of gender in the occupational choices of the sample. To test the first hypothesis, occupations listed on the Occupations List (Harmon, 1971, 1981, 1989; Leung & Harmon, 1990 as cited in Leung, Ivey, et al., 1994) were codified using the Holland Classification System (Holland, 1973). The list contains 155 occupational titles. Subjects were asked whether they had considered each occupation, when they had considered it, and if, when, and why they had stopped considering the occupation. Leung, Ivey, and Suzuki (1994) utilized ANOVA to interpret the results for the first hypothesis.

to attain high-prestige occupations can be a result of parental and familial expectations. Asian immigrant parents often encourage their children to consider high-prestige occupations to establish themselves in U.S. society" (Sue & Morishima, 1982, as cited in Leung et al., 1994, p. 408).

Different Perceptions of the "Collective"

It is interesting to note how each minority group's conception of the "collective" affects individuals' decisions to enter or not enter the teaching profession. As was mentioned earlier, minorities who entered the teaching profession often expressed a desire to better the world. Leonard Collins' belief about the profession reflects the collective definition instituted by African American teachers. In Foster's (1997) case study, Collins stated, "I don't live in this world to become rich, I want to live in the world to serve humanity" (p. 181). Collins' view of the collective as encompassing something greater than one's immediate family is what encouraged him to enter the profession. On the other hand, the collective within the Asian American communities seems to be defined by close kinship or the family unit (Leung et al., 1994). Hence, the need to bring prestige to the family results in the pursuit of more prestigious jobs and higher salaries.

Other reasons have been identified to explain the presence of a low number of Asian Americans in certain professions. One reason is the fear of facing racial discrimination when entering a profession with a low number of Asian Americans. Another reason hinges on the concept of self-efficacy discussed earlier; lack of self-efficacy contributes to the fear of facing discrimination and helps explain the high concentration of certain minority populations in particular career fields. Gordon's (2000) two-phase survey study reported that Asian Americans were not interested in teaching because they preferred to enter professions with a concentration of other Asian Americans. In fact, the third most frequent response given by the Asian American subjects explaining their reluctance to enter the teaching profession was 1) their own fear of working outside a comfort zone defined by language and diversity, and 2) a fear of taking responsibility for other people's children.

Research studies (Foster 1997; Gordon 1997; Hanushek & Pace, 1995; and Vegas, Murnane, & Willet, 2001) concluded that the problem of recruiting minority teachers has to be addressed in two ways. First, it is important to improve the quality of education received by minority groups in the United States in order to increase the supply of teachers. This would ensure that more minority teachers could pursue careers at the

administrative level without greatly affecting the supply of minority teachers. Second, it is important to increase the attractiveness of teaching by providing more financial incentives to high-achieving minorities who might otherwise choose more prestigious and lucrative professions.

Who Becomes a Teacher? The Minority Teacher Pipeline

Thus far we have discussed the influence of personal factors on the occupational choices of minorities. In this subsection, we will discuss literature that addresses individual characteristics and the organizational structure of teaching. However, we found only one theory-based analysis of the teaching structure and its implications for recruiting and retaining minority teachers.

Characteristics of Teaching as a Career

Mitchell, Scott, and Covrig (2000) described teaching as a juxtaposition of three factors:

- **Organizational structures.** *Organizational structure* refers to a school's working conditions. Mitchell et al. (2001) explained that isolation in the workplace contributes to the complexity of teaching. Teachers are segregated from their colleagues when they are assigned and confined to a classroom for a majority of the day. Typically, schools do not provide ample opportunity for teacher collaboration. This proves detrimental to the retention of novice minority teachers. (See Question 5 for more information on the importance of mentoring and teacher retention.)

  The organizational structure of teaching also provides only limited room for professional growth. The prospects for advancement are limited due to the small number of administrative positions available in a school building. The pyramid structure makes teachers feel powerless, unable to incorporate more innovative practices or exercise more control over the curriculum. As we saw earlier, minority teachers who enter the teaching profession are attracted to the revolutionary power of teaching (Su, 1997; Foster, 1990; Foster, 1997; and King, 1993), which includes challenging school curriculum (Su, 1997 and Foster, 1997). This desire to change the work of the teacher may be frustrating in actual practice.

- **Work (and task) structure.** *Work (and task) structure* refers to the duties and roles teachers are expected to perform in order to become more effective. These roles call for the teacher to devise and execute lesson plans, administrate and supervise the execution of instruction, attain adequate pedagogical skills and subject-area knowledge, instruct all students and provide mentor-like guidance, and serve as an active member of a small learning community. The task structure suggests that every member of the school community continues to learn, including the teacher.

- **Personal characteristics brought by each individual teacher to the profession.** *Personal characteristics* refer to congruency between the personality of individuals and the characteristics of teaching as a career. Mitchell et al. (2000) recognized the most successful or "expert" teachers as those who are able to reconcile organizational structure, tasks, and their personalities in their pedagogical practice.

The Teacher Pipeline

Mitchell, Scott, and Covrig (2000)[5] reviewed the theory and nature of the teacher labor market as part of a comprehensive process of conceptualizing the work of teaching, building an effective "pipeline" for preparing minority teachers to fill the growing need, and developing proposals for policy and programmatic strategies to increase the cultural diversity of the teaching workforce. The teacher pipeline metaphorically refers to the stages teacher candidates must successfully complete before they can proceed to the next step in the process.

Two additional studies (Vegas, Murnane, & Willet, 2001; and Hanushek & Pace, 1995) discussed in this subsection adopted the concept of a teacher pipeline to analyze their data. Vegas et al. (2001) created a model for a conceptual teacher pipeline in order to assess the impact of race, ethnicity, and academic

[5] The Mitchell, Scott, & Covrig study explored the demographic representation of minority subgroups from a California school district in successive stages of the teacher recruitment and preparation process in order to determine how and when they were selected out of the pipeline. The analysis included descriptive statistics and demographic analysis using data from U.S. population statistics, information from the National Education Association about U.S. teacher ethnicity, local school district data on student ethnicity, and student ethnicity data from University of California campuses and departments of education. Patterns of ethnic and racial representation are reported from various sources for the state and district levels, from high schools and California state colleges and universities, from education programs, and from the teaching population.

ability at each juncture of the teacher pipeline. Vegas et al. (2001) identified the benchmarks a person must reach before becoming a teacher as the following: (1) high school graduation, (2) entry into an institution of higher education, (3) attainment of a Bachelor of Arts degree, and (4) entry into teaching. (See Table 2 for more information on the results of Vegas et al.'s study.) The pipeline is further elongated by teacher certification requirements (Mitchell, Scott, & Covrig, 2000), which function to close the teacher labor market and restrict potential candidates (Hanushek & Pace, 1995; Vegas et al., 2001). Furthermore, although elementary school is not explicitly identified as part of the pipeline, an elementary school education does affect a person's ability to graduate from high school. Therefore, it is also a very important component of the concept of the teacher pipeline.

In contrast to Vegas et al.'s (2001) identification of the different teacher preparation stages, Hanushek and Pace (1995) relied on a more traditional timetable for their data evaluation. They set their study benchmarks according to annual increments as opposed to the stages a person is required to complete in the process of becoming a teacher. Therefore, a sample participant who was a high school senior in 1980 was expected to complete an undergraduate degree by 1984 and enter graduate school in 1986. (However, they noted that some students take longer than four years to complete their undergraduate degrees.)

Vegas et al. (2001) and Hanushek and Pace (1995) both used data from the National Center for Educational Statistics' (NCES) 1980 High School and Beyond (HSB) longitudinal survey. Analysis in both studies began with the selection of individuals expressing an interest in teaching; the studies evaluated their academic achievement based on composite test scores earned on an achievement test administered as part of the HSB survey. Contrary to Hanushek and Pace's (1995) broader sample, Vegas et al. (2001) specifically examined data from a cohort of high school sophomores in 1980 across twelve subsequent years.

Despite the different methodologies of the three studies, all revealed disproportionate attrition of minorities within the teacher pipeline. Specifically, Mitchell et al. (2000) noted that "individuals from some social and demographic groups 'leak' out of the system or are explicitly blocked in their progress toward specific careers much more frequently than others … At virtually every juncture in the teacher preparation pipeline the forces of labor market segmentation contribute measurably to the further concentration

of whites and a reduction in the numbers of blacks and Hispanics in this occupational group." This hypothesis is supported by Hanushek and Pace (1995), who found that white females were more likely to complete the teacher pipeline than members of racial and ethnic minority groups. Because testing and increased course requirements contribute to a decrease in the number of all potential candidates, their study found that by 1986 approximately 12.5% of all the teaching candidates were prepared to become teachers. Approximately five of the sixty-six African Americans who had aspired to teach in their senior year of high school became teachers. Nine of the eighty-three Hispanic students who aspired to become teachers had done so by 1986. The Vegas et al. findings supported the same patterns (see Table 2).

TABLE 2: Retention in the Teacher Preparation Pipeline

STEP	DEFINITION OF STEP	NUMBER OF SAMPLE AT THE BEGINNING OF STEP	NUMBER OF SAMPLE COMPLETING THE STEP	% REMAINING OF THE ORIGINAL SAMPLE
	High school sophomores in 1980	11,816	10,584	100%
1	High school graduation	10,584	9,125	89.57%
2	Sample participants who graduated from high school and entered an institution of higher education	9,125	5,924	50.13%
3	Attainment of a Bachelor of Arts degree	5,924	3,037	25.70%
4	Entry into teaching	3,037	434	3.7%

Source: Vegas, Murnane, and Willet (2001) based on the 1980 High School and Beyond survey.

Mitchell et al. (2001) documented how attrition in the potential pool of minority teachers starts in the high schools. Vegas et al. (2001) focused on a later part of the process, observing that the minority teacher shortage could not be solely attributed to fewer minorities choosing to enter the teaching profession, but also to attrition in the teacher pipeline. At each stage of educational attainment, requirements often eliminated the academically weak aspirants despite their desire to enter teaching (Hanushek & Pace, 1995). This reality was further supported in the findings of Vegas et al., which revealed that once students graduated college, Native Americans (58%), Hispanics (24%), and African Americans (29%) had the highest percentage of teacher entry. In fact, Mitchell et al. found that the drastic decrease in the number of minority teachers could not be attributed simply to the social movements of the 1960s and the Civil Rights Act of 1964—which opened other occupational fields to minorities—but also to the inability of minorities to make it through the teacher pipeline.

Weaknesses and Gaps

We do not know the extent to which current career choice theory applies to minorities' decisions to choose teaching as a career, if at all. There is already evidence that the desirability of salary, prestige, or other patterns of motivation differs from group to group (Shipp, 1999; Su, 1997). In addition, we have little evidence as to what supports or experiences might counteract the decision not to consider a teaching career.

Surveys of minority students at various levels of the educational pipeline would generate information about how career choices are considered by minority students as they mature; these surveys would also provide an informed basis for developing program and design studies that would incorporate and test the effectiveness of proposed strategies for increasing students' interest in teaching. These studies should include purposeful design of programs for specific racial and ethnic populations as well as inclusive programs.

Gordon (2000) and Sue and Kirk (1972, cited in Leong, 1995) indicated that fear of discrimination can influence Asian Americans' career decisions, causing them to avoid certain professions, including teaching. But we do not know in what ways this applies to other minority groups or if it might apply

only conditionally to Asians, depending on specific circumstances. And if minorities anticipate racism in education settings, what motivates them to participate nonetheless, and what would support them in environments that may be seen as unsupportive or hostile? Several of the studies that we review in this document provide some answers to this question, at least for African Americans (Milner, 2003; Milner and Hoy, 2003). However, there is still a need to confirm earlier findings and to conduct parallel case studies with other racial and ethnic groups as precursors to designing at least quasi-experimental interventions at the district level.

Shipp (1999) and others pointed to the importance of intrinsic motivation and the social justice agenda for African Americans. We have observed that these perspectives are not reflected in much of the discourse surrounding minority teacher recruitment. The review team believes that understanding the motivations of various ethnic groups for choosing education as a career is important enough to explore this issue further.

Research such as that described by Dillard (1994) that explores the explicit features of programs through case studies or design studies in selected contexts could be helpful in identifying effective approaches to engaging minority students of varying backgrounds. It will be important to include documentation of measurable, appropriate outcomes in the design of these programs.

Because interest is not the only factor predicting entry into the teaching profession (Mitchell et al., 2000; Vegas et al., 2001), more attention must be given to the attrition of minorities at every point along the teacher preparation pipeline. Other sections of this document point to other factors that address this question, including high school completion, college entry, college graduation, teacher certification and licensure, and mobility within the profession.

There are still relatively few rigorous studies regarding the reasons why different minority groups are attracted to and decide to enter the teaching profession. This gap could be amended by addressing the issue through study of occupational choice theories. Despite the prestige held by occupational choice theories, they have not been tested for consistency on minority groups. As Brown (1995) argued, there is a need to develop theoretical frameworks addressing occupational choice among different minority groups.

Data has indicated that within-group variability must be explored, implying that differences within groups must be analyzed and presented in studies. For instance, in this section we utilized the broad categories used to describe minority groups—African American, Asian American, Native American, and Hispanic—to describe heterogeneous populations because that is how the samples were grouped and described in their respective studies. However, we do recognize that *Asian American* encompasses people from East Asia, South Asia, and Southeast Asia. It also encompasses people whose immigrant statuses vary because they arrived either as political refugees fleeing a war-torn country (as is the case with Vietnamese, Laotian, and Cambodian populations) or as people who sought better economic circumstances (such as Chinese, Korean, Japanese, and Filipino populations). The same circumstances could be applied to many Hispanics. The Native American situation also varies based on tribal affiliation and extent of acculturation to mainstream cultural values and beliefs. The African American category is also a heterogeneous population in that it includes immigrants from Africa and the Caribbean as well as people of African ancestry who have lived in the United States for generations. Describing these differences and considering their implications for teacher preparation and retention in the profession might provide exciting new directions for both applied research and program development.

Question 2: What recruitment strategies and supports are most helpful in encouraging and preparing minorities to enter the teaching profession?

Recruitment as a Preparation Issue

The preparation period for teaching is as long as that for other professions, even though it offers fewer rewards in terms of its relatively low wage scale, culture of isolation, and flat organizational structure (Mitchell et al., 2000; Vegas et al., 2001). The consistent patterns of low academic achievement and minority attrition reported throughout the teacher preparation pipeline (described in Question 1) point to the need to support minority candidates along the way. Below we summarize information on supports for these students.

High School

The reviewers found some rigorous evaluations of effective high school programs designed to recruit young minority students into teaching. The available resources primarily included program handbooks with recommendations for districts to follow (Haselkorn, 2000; Clewell et al., 2000) and program evaluations (Fenwick, 2000; Urban Institute, 2000; Clewell & Villegas, 2001; Vegas et al., 2001). Following are some of the issues raised in the available literature.

Strengthening general academic programs within the high schools. Gifford (1986) contended that the lack of minority teachers pointed to the need for schools to provide a quality education for the pool of potential minority teachers. Gordon (1988) reviewed the policy recommendations made by the Holmes Group Report and concluded that "the lack of minority teachers is not due to a lack of ability but to the fact that schools have failed to provide and demand what was needed for success" (p. 151). In fact, there is striking evidence that we need stronger preparation of minority students before they enter college.

Requiring teachers to be certified in the subjects they teach. States and school districts are now required to have a "highly qualified teacher" in every core subject classroom (No Child Left Behind Act, 2001). This means that teachers must be certified in the field they are teaching (Olson, 2003). However, too frequently this is not the case. Ingersoll (cited in Quality Counts, 2003) analyzed public school students'

access to qualified teachers using the Schools and Staffing Survey (SASS). Findings from that survey indicated that (1) nearly one third of students in high-poverty secondary schools reported that they took at least one class with a teacher who did not have even a minor in the subject he or she was teaching; (2) secondary students in high-poverty schools were twice as likely as those in low-poverty schools to have a teacher who was not certified in the subject. In comparison, in low-poverty schools, about 70% of teachers were both certified and licensed in the field they were teaching. Ingersoll noted that, although states were taking steps to recruit and retain skilled teachers, few efforts targeted schools where these teachers were needed most.

Gitomer, Latham, and Ziomek (1999) supported these observations in their exploration of the relative success of white, African American, and Hispanic students on teacher qualification and certification tests. They linked 1977-1995 SAT and ACT test data with data from more than 300,000 prospective teachers who took any of the PRAXIS Series of preparation and licensing examinations between 1994 and 1997. They found that the lower performance of minorities on licensure tests tended to screen them out of the pool of potential teachers and resulted in an even more homogeneous teaching force—an increasingly white teacher population. By limiting the diversity of the pool of candidates for teaching, the testing resulted in a smaller group of candidates with higher test scores, but at the same time it limited the overall teacher supply by screening out minority teacher candidates. In addition, there was no evidence that higher test scores produced better teachers, particularly for students of diverse racial, linguistic, and cultural backgrounds.

Using this analysis, Gitomer et al. argued that if high standards were the wave of the future, it was important to prepare the potential teacher pool more rigorously, beginning in grades K-12. Their suggestions for strategies included targeting minority students as early as middle school, establishing rigorous but flexible alternative route programs to attract mid-career professionals into teaching, and creating supportive induction programs to lower the attrition rate of new teachers.

Minority students' persistence on the pathway to teaching. Vegas, Murnane, and Willett (2001) explored the roles that race, ethnicity, and academic skills played in predicting the persistence of high school students along the pathway from high school to teaching. Using data from the original sophomore

cohort of the High School and Beyond data set (1992), they used logistic regression models to predict the probability of the persistence of this cohort through high school graduation, college entrance, college graduation, and entry into teaching. Their predictor variables were indicators of racial and ethnic background and 10th-grade academic skills,[1] controlling for gender and interactions between the major predictor variables.

The results indicated that there were differences in high school graduation rates by racial and ethnic group for high school sophomores with the same 10th-grade test scores. Native American, African American, and Hispanic high school sophomores were less likely to obtain a high school diploma than whites and Asian Americans. These patterns were related to the fact that the test scores of Native Americans, African Americans, and Hispanics were considerably lower than those of the latter two groups. Interestingly, African American females were more likely to graduate from high school than white females with the same test scores. In fact, they had the highest probability of attending college, followed by Hispanic students, then white students. "In other words, most African American and Hispanic high school graduates with solid academic skills do enroll in college. The problem is that many minority high school graduates have relatively weak academic skills, as measured by 10th-grade test scores" (Vegas et al., 2001, p. 435).

Among the college graduates in the sample, Native Americans, African Americans, and Hispanics had the highest percentages of teacher entry (58%, 29%, and 24% respectively for females; and 7.1%, 10.6%, and 10.4% respectively for males). The groups with the lowest rates of teacher entry were Asian American females and males. It is notable that for every "majority racial/ethnic group, female college graduates with strong academic skills were less likely to become teachers than were graduates with weaker academic skills" (p. 438). The authors noted with concern that teaching was a "relatively low-status, low-paying occupation … in which there are few financial rewards for excellence" (p. 438). They also considered it troubling that the minority teachers entering the profession might be the less academically talented ones.

[1]These included a battery of measures of science, math, reading, vocabulary, and writing. A composite score was created from these five measures.

The researchers concluded that improving education all along the pipeline was a more immediate need than persuading candidates to pursue teaching as a career. They noted, "the problem is that too many students, especially African American, Hispanic, and Native American students, reach 10th grade without strong academic skills" (p. 442). This is particularly important because weak mastery of 10th-grade content predicts subsequent failure to complete high school and enter college. The researchers argued that the critical challenge was to increase achievement and the graduation rate of minority students by improving the quality of the teaching they receive.

Identifying interested and talented minority high school students as potential teachers. Recruiting New Teachers (cited in Haselkorn, 2000) has recommended that secondary students be offered teaching-related clubs, general career awareness activities, and visits to college campuses with teacher preparation programs. However, the review team for this document failed to identify any research or even external evaluation studies that explored the effectiveness of these programs in steering high school students into undergraduate programs. To frame testable hypotheses in this area, we must seek out descriptive information about programs. In this vein, we obtained informal case study information from an interview with Ann Rothstein, founder and project director of the Teaching Academy, a program with a teaching focus in a large public high school in New York City (phone interview, June 23, 2003). Initiated in 1984, the program is well established and has a collaborative relationship with Lehman College of the City University of New York. Students in the Academy take a four-semester preteaching internship (which culminates in the participants actually teaching a lesson, with supervision) and Saturday workshops during the school year. Rothstein reported that approximately 200 former participants were currently employed in the New York City Public Schools. Unfortunately, systematic evaluation information is not available for this program, nor are resources available to follow its graduates long term.

Given that the largest potential supply of minority teachers is arguably found in the public schools, identification and systematic study of high school encouragement programs is clearly needed. Case study or program evaluation data may also provide understandings that could inform further survey or design research.

PreService College and University Programs

A review of the literature suggests that colleges and universities must examine their present policies in regard to recruitment and training of minority teacher candidates and create new strategies to meet the current shortage. A review of literature, research, and effective programs may serve as a foundation for the strategies that follow.

Assessing the enrollment of minority candidates and adopting new practices and policies to meet the current need. The Government Relations Committee of the Association of Colleges and Schools of Education conducted a survey related to minority teacher recruitment and retention in college preservice education programs (Case, Shive, Ingebretson, & Spiegel, 1988). The survey was distributed to all of its 108 member institutions and had a response rate of 67.7%. Respondents reported a large number of recruitment strategies and supports for minority candidates, including outreach to potential students before admissions by phone and in person, relationships with high school guidance counselors, career days or career fairs, and direct mailings. Respondents felt that personal contacts were the most effective recruitment strategies. Multiple regression analyses were run with minority enrollment as the dependent variable; independent variables included the number of support services, the number of ethnic opportunities, the number of minority professional staff, and the existence of a multicultural requirement. The analysis produced evidence of statistically significant relationships between minority enrollment and the number of support services and ethnic opportunities, with the strongest correlation observed between minority enrollment and the number of minority professional staff. (The hypothesized importance of the multicultural requirement was not supported by the data.) On the other hand, some of these same variables (number of ethnic opportunities and number of minority professional staff) were also predictors of "excessive attrition" (p. 56). No explanations were offered for apparently contradictory results. The researchers also voiced concerns about the challenge posed by mandated teacher competency tests for minority students, whose passing rates were estimated at 71%, versus 90% for majority students.

On the basis of descriptive analysis of the survey responses, Case et al. reported that member institutions had adopted new policies and strategies for recruiting and retaining minority candidates, but no information was reported regarding their success. Recommendations for more effective practice included identifying potential teacher candidates much earlier, using more personal recruitment methods,

providing intensive university and post-graduate training, providing support services while in school, employing exit criteria that did not require heavy reliance on standardized testing, and increasing the diversity of college faculty.

In a review of existing research around three major education reform agendas (the National Council for Accreditation of Teacher Education (NCATE) or professionalism agenda, the deregulation agenda, and the social justice agenda), Zeichner (2003) argued that colleges of education were not adequately addressing the cultural disparities between teachers and their students in public schools. He claimed that (1) teachers are not being prepared to teach across lines of ethnicity and race, language, and social class in most preparation programs; and (2) the typical response of teacher education programs to the growing diversity of K-12 students is to add a course or two on multicultural, bilingual/ESL, or urban education to the curriculum and to leave the rest of the curriculum intact.

Claycomb and Hawley (2000) drew a similar conclusion from their review of the literature on teacher preparation programs, drawing on case studies of two model induction programs in New Mexico and Cincinnati, Ohio, and evaluation results from programs in Texas and California. They noted that most teacher preparation programs did not adequately train teacher candidates to work effectively with students from diverse racial and ethnic backgrounds. In the opinions of these researchers, this lack of attention in curriculum to the needs of minority students might also create an environment in which minority teacher candidates themselves feel marginalized (see Part II, Question 4 for minority teacher candidates' experiences in preservice preparation programs). Because there is little diversity in the faculties of schools of education, professors cannot draw on their own experiences for firsthand knowledge. Zeichner (2003) recommended strategies to strengthen these schools of education, including diversifying staff where possible and providing hands-on experiences in diverse schools.

Our review of available literature did not reveal any studies of preservice programs with quasi-experimental designs intended to address these issues. The strongest evidence of promising practices may be drawn from the material on the experiences of minority teacher candidates in particular programs designed to support them (primarily appreciative case studies or personal reflections, reported in Question 4) or from the evaluations of preservice preparation programs reported in Question 3.

Building academic support strategies in undergraduate programs. After reviewing the Pathways to Teaching Careers program—an alternative teaching certification program being widely implemented across the country—and other programs with evidence of positive outcomes, Fenwick (2000) suggested that minority students in undergraduate teacher preparation programs need extra support. His suggestions included precollege orientation programs that provide an introduction to the teaching program, support to help students develop learning and study skills, and individual and group counseling. He also recommended peer-mentoring programs. Dillard (1994) described another, particularly interesting, precollege preparation program (see Questions 4 and 5 for descriptions of this program and its outcomes).

Ingersoll (1996) made similar recommendations for supporting minority students in college programs; he suggested that teacher preparation programs

- conduct individual, diagnostic student assessment to assist faculty in choosing appropriate courses as well as in determining the amount and types of support services needed;
- offer tutoring services to help students understand course content as well as to help them with homework;
- provide academic advising that is concentrated and personalized;
- provide study and test-taking skills through a course or through several sessions, with follow-up; and
- monitor students' academic progress on a continual basis to ensure a positive experience.

The review of the literature did not reveal rigorous research regarding the optimal design of precollege and undergraduate supports for minority students. However, Question 4 details the experiences of students in undergraduate programs and suggests effective strategies for replication and systematic evaluation.

Providing financial incentives. Financial incentives are powerful attractors and might include financial support for tuition, stipends to pay for books, or money for transportation. Scholarships or loan forgiveness might very well determine whether or not a student can pursue a college degree. Academic scholarships traditionally have gone to the best and brightest, leaving out the minority and/or poor student who is in need of it the most. Responding to both the Holmes Group report and the Carnegie Forum, Gifford (1986) recommended that more financial incentives be offered to prospective teachers, especially minorities. Gifford contended that increasing the financial allocations made to colleges and schools of education should be a priority in the effort to encourage minorities to attend. Spellman (1988) also pointed to Pell Grants, Regents scholarships, and work/study programs as sources of potential support. Unfortunately, the review team identified no rigorous research of the long-term results of this kind of support.

Recruiting Potential Candidates Through Partnerships

Community Colleges as a Resource

Gederman (2001) reported that more than 21% of all teacher candidates started their preparation at a community college. A 1999 survey of community college presidents and deans found that 54% of responding colleges had teacher preparation programs (Haselkorn, 2000). Minority students make up 30% of the community college student body nationally and 50% in some rural and urban areas where the minority teacher shortage is the greatest.

Because community college students are often of lower socioeconomic status and are more likely to belong to minority groups than four-year college students, they require a strong academic and social support system (Gederman, 2001). For instance, Project TEACH at LaGuardia Community College provides the academic and counseling services necessary for students to complete their studies and make a successful transition to a four-year teacher education program (Schulman, 1990, cited in Gederman, 2001). These support services include financial aid, employment guidance, and learning groups that provide academic and social assistance as well as individual and group career counseling services. Unfortunately, no evaluative information was reported regarding the success of graduates.

Partnerships and Collaborative Strategies to Strengthen the Minority Pipeline

The research base that scientifically proves the apparent success of recruitment strategies is limited. Ng (2003) and Gederman (2001) suggest some promising strategies for collaboration based on program reviews, calling for program articulation and collaboration between two- and four-year colleges in order to fund recruitment efforts and instructional programs. Ng (2003), Gederman (2001), and Clewell and Villegas (1998) suggested building communication and collaboration between universities, secondary schools, and public school districts around clear goals and roles for joint program development. Specific recommendations from Gederman (2001) included:

- Establishing articulation agreements with four-year institutions to ensure a smooth transition for students.
- Creating formal partnerships with four-year institutions. Such arrangements would be stronger than the articulation agreements above because they would require that the partners agree on a shared mission and develop a joint curriculum. Students would then take coursework along with a field experience at the two-year college and continue the degree program in their junior and senior year at the four-year college or university.
- Developing traditional teaching education programs as well as alternate-route certification programs.
- Involving students in local schools and actively recruiting in the service area.

Recruitment as a Testing Issue

Minorities and Mandated Testing for Competency and Certification

As reported above (Mitchell et al., 2000; Gitomer et al., 1999; Case et al., 1988), there is reliable evidence that competency testing poses special obstacles to minority teacher candidates. Nearly all states have created policies that require potential teachers to take as many as six tests throughout the pipeline, beginning in some states with high school graduation tests. Discussing the Holmes and Carnegie reports, *Washington Post* columnist William Raspberry asserted in Gifford (1986) that "the reason minority applicants fare worse on the tests than whites is that they themselves are victims of inferior teaching" (p. 263). The opposing position in this controversial issue argues that such testing is essential to achieve quality in our future teachers.

The Institute for Higher Education Policy (2000) generated a policy report under commission to the Alliance for Equity in Higher Education. The report described the Professional Assessment for Beginning Teachers (PRAXIS) Series—the test most commonly administered by the majority of states to determine teacher competency.[2] There are three PRAXIS tests that mark significant transitions in the careers of aspiring teachers:

- PRAXIS I measures basic reading, writing, and mathematical skills and screens students for entrance into teacher training courses.
- PRAXIS II is usually taken at the end of college and measures knowledge of content area (those subjects in which one intends to teach).
- PRAXIS III assesses first-year classroom practice and is currently being tested across the country.

To explore the effect of teacher testing on the pool of potential teachers, Gitomer, Latham, and Ziomek (1999) examined SAT and ACT college admission scores and PRAXIS I scores for more than 300,000 prospective teachers who completed a licensure test from PRAXIS I and II between 1995 and 1997. Not surprisingly, they found that white students passed the PRAXIS tests at higher rates than minorities and that variation in the states' passing rates affected the racial and ethnic diversity of the teaching pool. The resulting pool of prospective teachers was 90% white, 5% to 6% African American, 1% to 2% Hispanic, and 1% Native American. Gitomer et al. estimated that these tests would decrease the number of potential minority teachers, reducing the estimated numbers of African Americans by 51% (a loss of 7,462), Hispanics by 22%, and Native Americans by 22%. Comparatively, they projected a 23% increase among whites. Gitomer et al. concluded that teacher preparation programs must provide students with strong academic skills but that the effect of testing on the diversity of the teaching force was not promising. They added, however, that the data suggested that teachers in academic subject areas had academic skills equal to or higher than those of the larger college graduate population.

[2] The Praxis Series I and II were developed by the Educational Testing Service (ETS) in the 1990s. Level III was still being tested when the Institute for Higher Education Policy's report was written in 2000.

In response to a recent universal call to raise the cutoff scores of teaching and licensure examinations, Memory, Coleman, and Watkins (2003) examined scores on the Pre-Professional Skills Test (PPST) given in the state of Massachusetts; the test was given to a group of elementary teachers by their university supervisors. The researchers sought to explore what effect increasing the qualifying score by one point would have on the pool of qualified African American teaching candidates. They concluded that one of the negative tradeoffs in raising basic skills cutoff scores for teacher licensure is severely reducing the size of the pool of qualified African Americans.

Smith, Miller, and Joy (1988) examined the impact of performance-based testing on the supply of minority teachers through a case study of the Florida testing system. They concluded that the extensive Florida testing program contributed to a decrease in the number of minority teachers. They noted that the typical student wanting to teach had to pass six different levels of testing before becoming a teacher and that the testing requirements had a restrictive effect on the supply of minority teachers in the state, eliminating a disproportionate number of minorities at each point along the path. A 19-state study prepared for the National Education Association (NEA) and the Council of Chief State School Officers estimated that admission and certification testing had eliminated over 37,700 minority candidates (Smith, 1988). Had data been available for all the states, the numbers of minority candidates eliminated would have been much greater. In concluding, Smith expressed concern that the new reform agenda might perpetuate old inequities.

Justice and Hardy (2001) studied the effects of performance-based testing on minority teacher candidates taking the Examination for the Certification of Educators in Texas (ExCET). They studied the factors that led to success or failure on the test. The exam consists of a series of comprehensive examinations in the student's teaching field and in professional knowledge. Results indicated that GPA was a statistically significant but weak predictor of success and that test-taking skills and practice sessions led to positive outcomes. The study concluded that early intervention and continuous preparation for the exam was very important for African American and Hispanic students. In addition, they recommended that college faculty infuse critical thinking throughout the curriculum and use professional educational terms aligned with the competencies to be tested.

When studying the effects of testing on minority students, Cole (1984, cited in Clewell et al., 2000) found that minority students had many needs and concerns regarding teacher testing. Concerns included the following:

- Examinations were not standardized on representative samples.
- Tests assumed standard experiences for all test takers.
- Tests were a poor predictor of teacher success in the classroom.
- Tests frequently were culturally and linguistically biased.
- Tests created the pressures of competition and time limits.
- The different races and attitudes of the examiners produced bias.

An abundance of research on competency testing points to the conclusion that colleges and universities need to better prepare teacher candidates for content-area and teaching and learning pedagogy assessments. This begins with the acquisition of study skills early in a program and culminates in specific test-taking skills in preparation for the teacher examinations.

Hood and Parker (1989) went even further than Cole, arguing that teacher testing was often biased against minorities because it lacked the necessary reliability and validity. They suggested that the use of standardized tests for initial teacher certification be reconsidered given the negative impact it has had on minorities. In a comparison study of the Illinois and Pennsylvania certification testing systems, they found that the inclusion of numerous African American test panelists in Illinois tended to reduce the bias in test questions. The Illinois Education Reform Act of 1985 specifically required that the test be racially neutral so as to avoid discrimination based on race or national origin. A conclusion of this study was that there needed to be extensive minority participation at each stage of the development of teacher testing.

Lemberger's (2001) case study reported the effects of raising certification standards on three experienced teachers in New York State who were not native English speakers. The author documented the teachers' struggles to pass what was for them a timed test unrelated to their competency in the classroom. Lemberger pointed out that the test requirements exacerbated teacher shortages by creating demands

that disadvantaged minority language teachers who had otherwise excellent teaching records. Her recommendations included a careful review of the task demands of the current certification examinations and more support for the teachers taking them.

Alternative Assessments

Several states are testing performance assessments that include individual portfolios of preservice experiences in the classroom as an additional or alternative way of measuring teaching quality. Youngs, Odden, and Porter (2003) analyzed the use of an alternative assessment tool in several states and found that, although many were experimenting with them, few were actually using them for licensure decisions in the 2001-2002 school year. To promote higher levels of teacher quality, these researchers recommended that states consider including performance assessments for all beginning teachers.

Emporia State University (ESU) in Kansas has used performance assessment to evaluate its teacher candidates. According to Bennett (2003)—the associate dean of the Teachers College—the school's Teacher Work Sample (TWS) approach is a challenging way of assessing real classroom experiences and skills. The instrument's evaluation factors have been aligned with standards from NCATE, and TWS data collection and analysis continues to be an ongoing part of the curriculum development process for accreditation. Areas that seem to have improved from the use of the Teacher Work Sample approach include the following:

- teachers' awareness of classroom context
- the ability to write outcomes and align instruction
- the use of collaborative or multilearner environments
- the use of a multi-assessment approach
- the use of technology
- personal classroom successes
- degree of reported impact on student learning

The Kansas State Department of Education recently decided to adopt a TWS similar to ESU's as a performance assessment for conditionally licensed teachers moving on to a professional license.

The review conducted for this summary generated little research on performance assessment for teacher certification, but such assessments appear to be a promising and potentially more valid way of measuring teachers' competence in the classroom. This is an area for continued attention and possible collaboration among local university departments of education, major school systems, and state departments of education.

Recruiting Experienced Minority Teachers

Unfortunately there is little, if any, research that systematically explores approaches to recruiting experienced minority teachers. One exception is Mitchell et al.'s (2000) comprehensive review of the access of minority teacher candidates to the teacher pipeline, of the teacher labor market, of the task structure of teaching, and of the organizational structure of schools. Their review led them to propose a number of actions employers can take to increase the recruitment and retention of minority teachers. Their recommendations included providing continuing professional development, encouraging collaborative relationships within schools, providing financial and other exogenous incentives, and generating public information and awareness. Haselkorn (2000) called for comprehensive recruitment planning, including creating a representative planning team to collect data, evaluate the district's needs, identify resources, and recommend changes in policy and practices.

Providing financial incentives. The literature review conducted for this report revealed essentially no research on the effectiveness of financial incentives, although they were mentioned by Mitchell et al. (2000). The following are suggestions made by the American Association of School Administrators (AASA). The AASA report (2003) noted that financial incentives must be offered to channel teachers to hard-to-staff and low-performing schools. The report suggested that a 20% increase over other comparable salaries was needed. Creative financing for teachers might take the following forms:

- Housing assistance, particularly in urban areas where housing costs can be prohibitive for a teacher on a beginning salary. In some districts, high school students enrolled in building trades programs have worked to build low-cost housing or apartment buildings that are available to new teachers or to teachers who have worked fewer than three years.

- Signing bonuses for new teachers hired to teach in challenging school environments and/or critical-demand subject areas. Massachusetts created a $20,000 signing bonus program for 50 college graduates willing to teach in urban areas and committed to working in the state for four years.

- Salary increases. Atlanta, for example, is able to draw large numbers of teachers from Alabama, where salaries are generally lower.

- Congress signed a bill that provides above-the-line tax relief for teachers for the first $250 they spend in out-of-pocket expenses. A new tax deduction for teachers was included in the 2003 federal budget (National Education Association, 2003).

Identifying target populations from which to recruit candidates. Traditionally, schools have recruited teachers from colleges and universities with teacher education programs. That strategy alone does not result in acquiring the necessary numbers of minority teachers, however, and school districts are beginning to explore longer term solutions to the teacher shortage (Shen, 1998; Fenwick, 2000). As a result, districts are targeting students and employees from their own systems and collaborating with colleges and universities to assist in providing programs to train this special population (Haselkorn, 2000). It is also worth noting that recruiting may be limited by differing licensing requirements from state to state. Darling-Hammond (1997) suggested that states and districts should create a more flexible system allowing teachers to remain certified when moving from one state to another because the licensure process is cumbersome and inhibits flexibility in recruiting teachers from other states.

Developing a strong marketing and outreach campaign. Pesek (1993) recommended targeting and placing advertising in minority publications such as *The Black Collegian*, a brochure that is sent to approximately 500 university career placement centers across the country.

Supporting recruitment and retention through community partnerships. Community contacts can be helpful in identifying minority candidates (Pesek, 1993). Contacts may also help by linking schools with minority networks such as church groups, fraternities, and sororities on campuses, and alumni in the communities. Recruiting New Teachers (cited in Haselkorn, 2000) also recommended seeking out minority interns from neighboring teacher education programs and sending a multi-ethnic team to attend career days at predominantly minority colleges.

Creating a support network for teachers of color. A supportive infrastructure might consist of minority and other teachers and community members to help new teachers (Jorgenson, 1999). Pesek (1993) further suggested that school districts and their larger communities focus on developing structures of social and cultural support for persons of color in order to improve the recruitment and retention of minority teachers. The case studies by Milner (2003) and Milner and Hoy (2003) both attested to the support that minority teachers receive from relationships with their students and the community.

Overall, this review uncovered little rigorous research regarding recruitment of experienced teachers, indicating that this is a promising area where we still have much to learn.

Weaknesses and Gaps

As noted, the review team found a regrettable lack of rigorous qualitative descriptions, program evaluations, or quasi-experimental research on effective high school programs designed to interest young minority students—particularly immigrant students, for whom teaching may still be a respected profession. We do not know whether this is a function of the limited number of programs that have been documented or of the limited number of programs in existence. However, the little we know about the programs that do exist suggests that they might be helpful in encouraging minority students to consider teaching as a career. Further research into the literature and the Web sites of large city school districts as well as of major donors (such as DeWitt Wallace, Reader's Digest, IBM, Gates, Ford, and Carnegie) may reveal additional effective programs for documentation or evaluation.

It is beyond the scope of this review to examine in detail the reasons why there is a clear need to strengthen the academic programs offered to minority students in so many public high schools; it is clear, though, that weak high school preparation places many minority students at a disadvantage in completing high school requirements and gaining entry into and completing college. It is clear that this will continue to operate as a major constriction in the minority teacher preparation pipeline.

There will continue to be a need to closely document and evaluate the structures, professional development practices, community engagement practices, and high school programs that are unusually successful in supporting high achievement among minority students. It is probable that effective school leadership is a critical part of the solution, but the nature of that leadership for varied contexts and racial and ethnic groups has not been systematically examined. A sample of case studies in large school districts in California or New York might provide rich information for further design research at the district level.

Research shows that the patterns of minority students' achievement and graduation differ across racial and ethnic groups and contexts. Exploring and analyzing this variation will be an expensive and massive undertaking, but meta-analysis of student reading and mathematics achievement as mandated under No Child Left Behind (NCLB) might be feasible. Such an analysis could produce important findings if appropriate control variables are available for student, program, and school characteristics.

In addition, if it is true that the shortage of qualified minority teachers is as much one of mobility as attrition, then we need to know more about the optimal conditions for retaining experienced teachers within the school. Smith and Ingersoll's recent (2003) exploration of the effective components of teacher induction programs is a model for exploring this question. In their study, the components of induction programs were modeled as predictors of teacher retention using national survey databases. Replicating this work while including racial and ethnic information could generate helpful information for program design.

While it appears that the presence of minority faculty members as models and mentors is an important feature of some successful preservice programs, we do not know the unique contributions of these faculty members and program features. Promising aspects of preservice relationships and programs need

to be systematically identified through careful case studies of program features and mentor-mentee relationships. Design studies of particular programs with varying configurations of features can be developed and implemented as alternatives within a university or across a consortium of colleges and universities. Additional case studies and narrative descriptions of the experiences, understandings, and practices of minority teachers at both the precollege or college level would help clarify possible replication of programs in other contexts.

While personal contacts are perceived to be helpful in recruiting minority candidates into university preservice programs, we still lack specific information about what types of outreach efforts attract what kinds of students. This is also true regarding what kinds of supports colleges should provide to minority students already enrolled in education programs. There are a number of ways in which this weakness could be addressed—for example, through in-depth follow-up on programs that appear in the literature without sufficient documentation. Follow-up would allow us to at least develop a diverse sample of outreach strategies with outcomes in varying contexts.

Zeichner (2003) suggested that colleges needed to do a better job teaching across lines of ethnicity, race, and class by teaching courses that provide students with greater cultural awareness and give them hands-on, real-world experiences. Identifying these courses or activities and evaluating their components and outcomes would be important for both minority and majority student populations. What would program activities and content be? How would they vary for different racial, ethnic, or gender groups? And what would be the impact on behavior, peer relationships, career choices, and retention in college?

The research also indicates that minority candidates disproportionately struggle to pass required professional certification examinations and may be excluded from college entrance on the basis of examinations that do not accurately predict successful college or teaching performance. Many charge that examinations alone should not be the sole measure of quality teaching. Performance assessment with the use of individual portfolios needs to be explored and evaluated to determine its effectiveness as a predictor of teachers' readiness for admission to a precollege program or as an indicator of teacher pedagogical expertise and content knowledge. Issues of validity are particularly important for teachers who are not native speakers of English.

More research is also needed to assess the reliability and validity of teacher examinations from state to state. Teacher examinations need to be further scrutinized for racial and ethnic bias, and adjustments need to be made to increase validity for minority groups (such as extended time limits or use of a dictionary). It would also be useful to include assessments of classroom practice and a portfolio review as components of the teacher certification process. Surveying targeted state and district practices would help to facilitate the design of appropriate validation studies of a broader certification assessment package.

Finally, there is much to learn about the optimal supports that help retain minority teachers where they are needed. Smith and Ingersoll (2003) provided a model for assessing the effect of various inservice supports on teacher retention. We do not know whether the same supports are effective for minority teachers. However, the availability of Smith and Ingersoll's model—plus the possibility of replication if indicators of minority status are available—makes pursuing this question worthwhile.

Question 3: What does the research tell us about the effectiveness of preservice programs designed to prepare minority students?

The review team found descriptions of a wide range of preservice programs, many of which have designs that seem promising for preparing new teachers effectively. However, the team found little rigorous program evaluation or other research focused on determining the overall effectiveness of these programs or their effectiveness for particular groups of candidates in particular contexts. For this reason, we have emphasized studies with stronger designs. For example, the review team found three helpful studies based on analyses of nationally or regionally representative samples of population data.[1] In addition, some program evaluations were very informative (Clewell & Villegas, 1998; Clewell et al., 2000). However, because there is such a large gap in the research, the material in this section includes sources not usually included in research reviews—program descriptions from reports, descriptions of minority-serving institutions, and policy documents—as raw material that will help to inform the design of strong research and evaluation studies in the future.

Overall, this section of the document includes 10 literature reviews, two survey analyses, six program descriptions, and four articles offering policy perspectives regarding minority teacher recruitment and retention. Program evaluation data were also reported from Fenwick (2001) and Clewell and Villegas (1998).

Federal, State, and Privately Funded PreService Recruitment Initiatives

State and federal agencies, local school districts, colleges and universities, private entities, and various partnerships and collaboratives have taken action to develop preservice programs designed to recruit minority candidates to the teaching profession. The structures of recruitment programs vary widely; however, their general characteristics are similar. Clewell and Villegas (1998) described four characteristics of successful minority teacher recruitment programs: commitment to multiculturalism, support services for participating students, financial incentives, and use of cohort groups. They insisted that these programs

[1] AACTE, 1992, 1999; Gitomer, Latham, & Ziomek, 1999; Mitchell et al., 2000.

(1) must incorporate more meaningful experiences into curricula in urban schools; (2) must forge a collaborative relationship with the public schools; and (3) must provide teacher education curricula that reflect the attitudes and skills teachers must have in order to work effectively with children in the urban environment.[2] We describe eight of these programs at the end of this section; these were chosen primarily to demonstrate diverse models that provide outcome information. This section of the report adopts Yasin and Albert's (1999) structure for understanding the numerous recruitment programs that have sprung up to address the minority teacher shortage.

Federal Initiatives

The U.S. Department of Education (DOE) primarily addresses the problem of minority teacher recruitment by offering competitive grants to institutions that encourage minority students to enter teacher preparation programs. The largest national effort was the funding of the Consortium for Minorities in Teaching Careers. This consortium, composed of 10 universities and colleges, formed a collaboration to design a national model for the recruitment and preparation of minority teachers (Yasin, 1999). The DOE also offers smaller grants for minority recruitment through the Teacher Partnerships and Teacher Placement programs. The Troops to Teachers program is a federal initiative funded by the Department of Defense and managed by the states. Only limited evaluation material is available to assess its effectiveness, however (see explanation under the Examples and Results section on p. 64).

State-Sponsored Initiatives

In the last 15 years, as a result of pressure from state legislatures, state boards of education, and teacher certification boards, the states have taken action to address the problem of the minority teacher shortage (Darling-Hammond & Dilworth, 1997). State initiatives include organizing a task force to conduct a needs assessment, hiring state employees to oversee the task of minority teacher recruitment, mandating that school districts and state teacher education programs develop minority recruitment plans, and providing the necessary funds to implement these initiatives. In addition, most states provide funds for the recruitment of students for newly designed programs (Clewell & Villegas, 1998). States respond differently depending on their perception of the severity of the problem. Some of the typical responses include

[2] For more information on teacher roles and the occupational structures of teaching, see Mitchell et al., 2000.

- establishing criteria for admission to recruitment programs,
- monitoring school districts' recruitment plans,
- creating plans to attract alternative-route students and policies that allow for flexible and nontraditional procedures,
- providing grant money to establish statewide minority recruitment programs at colleges and universities,
- encouraging collaboration and partnerships between community colleges and four-year teacher preparation programs, and
- creating clearinghouses and job banks.

Private Initiatives

The private sector has contributed significantly to programs intended to encourage minority teacher recruitment. There are a number of programs funded by the Ford Foundation, Carnegie Corporation of New York, the Pew Charitable Trusts, the Rockefeller Brothers Fund, and others. Although there are many types of programs, most of the private sector recruitment initiatives target four groups: precollegiate, college, paraprofessional, and career changers, such as individuals returning from the Peace Corps or the armed forces. Some interesting evaluation data have been generated for privately funded initiatives (see below).

High School-to-College Partnerships

Irvin (1990) reported that the most promising approach to the crisis of the minority teacher shortage was the collaboration between K-12 educators and colleges and universities. Hunter-Boykin (1992) observed that collaborative teacher training models increased communication and accountability between public schools and universities.

Mitchell et al. (2000) reviewed the demographic distribution of minorities at various points along the teacher pipeline and concluded that numerous potential teachers are lost before college preparation even begins. This finding supports the contention that recruitment programs must reach into the middle

and high schools to strengthen awareness and promote interest in teaching as a career. To do this, colleges and universities with teacher education programs across the country have created partnerships with school districts. Some aspects of successful partnerships include

- formation of Future Teachers clubs in the schools;
- student awareness programs that focus on teaching as a career;
- tutoring in after-school programs;
- hands-on campus experiences for middle and high school students;
- summer enrichment residential campus experiences;
- scholarships and other financial incentives for graduating seniors, some with reciprocal agreements built in;
- individual and career counseling;
- assistance with critical-thinking and test-taking skills;
- workshops to promote cultural awareness and an understanding of African American, Hispanic, and Native American history;
- expanded internship placement;
- vigorous searches for funding to finance teacher recruitment programs; and
- magnet schools with a concentration on teaching careers.

Examples and Results

Not all program documentation included evaluation data, and not all programs had the resources to support a rigorous evaluation. As a result, and also because of natural variations in program design and implementation, the available evaluation data indicated mixed results. We are therefore not able to speak with certainty about the effectiveness of preservice minority recruitment programs as a whole. Still, evaluation data provided interesting possibilities for further research. A large number of examples of

minority teacher recruitment programs were described in Clewell et al.'s (2000) review of the literature on teacher recruitment programs. A diverse sample of these program descriptions is included in the following sections of this report.

School-to-college partnerships. The Southern Regional Education Board (SREB) (Bolich, 2003) conducted a study of recruitment programs initiated in their 13 member states. The study found that many SREB states have school-to-college partnerships to introduce middle and high school students to careers in teaching. One of these, the South Carolina Center for Teacher Recruitment (SCCTR), has vigorously addressed the minority teacher shortage by appropriating funds from the state to create recruitment programs on many fronts. From 1989 to 2001, the percentage of minority education graduates increased from 9% of all certified candidates to 21.4%. In 2001, the overall percentage of minority teachers in the state was just over 16%. Two examples of programs from SCCTR that solely focus on minority recruitment are discussed below:

1. **The Teacher Cadet Program**: This partnership with nearby universities gave juniors and seniors in high school in-depth curriculum and hands-on experiences in teaching pedagogy. One hundred and forty-five schools participated in this program. Because the students selected tended to be relatively high achieving, it was not clear why they might have needed assistance to complete high school.

   Outcomes: Self-reports of program alumni indicated that 21% were teaching and credentialed; 4% were teaching without credentials. Forty-one percent were still students, with 61% of these in master's or other graduate programs. In addition, 88% of alumni who reported being classroom teachers were white, suggesting that the goal of recruiting minority teachers might not have been met. However, since the survey response rate was low (20%), conclusions may be made only with caution (Clewell et al., 2000).

2. **South Carolina Minority Access to Teacher Education (MATE)**: This program began as a teacher recruitment initiative in 1987 and is designed to motivate rural, minority high school students to attend college and to pursue degrees in education. A secondary goal is to increase

the supply of teachers in critical geographical areas. Students are recruited primarily from 21 rural districts that have high rates of poverty and low academic scores. Students must have maintained a 2.75 academic average and must pass a qualifying test. The program has three strands:

- The Pre-MATE Club provides high school students with numerous motivating classroom activities. Each Pre-MATE club receives $250 to defray the cost of club activities. The club meets after school or during activity time and recruits student who may be interested in teaching; it engages in many activities to help students advance towards a teaching career.
- A three-week summer residency program also serves high school students and includes classes in mathematics, foreign languages, communication arts, and test-taking skills. In addition, students visit a college campus. Students also attend seminars on topics such as college financial aid and teaching as a career. A student stipend of $300 is provided.
- The Minority Access to Teacher Education program is a forgivable loan program available to minority education majors at Benedict College. Program staff members give students individual attention to guide them through the program.

Outcomes: Goals of the programs include recruiting minority students to study education in college and to teach critical subject areas or in critical geographic areas. The number of participating high schools and the number of students rose from 1988 to 1996. There is no data showing how many of those students entered college and majored in education. Program records have shown that, during that same period of time, 63 students graduated as program scholars in the preservice program and 52 of them (83%) taught in South Carolina schools for at least three years. They responded on a survey that they were not likely to teach in critical geographic or subject areas, so we cannot conclude that the program succeeded in that goal (Bond, 1997, cited in Clewell et al., 2000).

School district-university collaborations. The following programs feature collaborations between universities and one or more school districts in their areas. These programs focus on nontraditional candidates for teaching positions, including paraprofessional classroom aides and those who may be switching careers.

1. Urban Teaching Partnership Program (UTP): The University of Nevada (UNLV) developed this program to recruit teachers for the urban, diverse schools of Clark County School District (CCSD) in Las Vegas. The program was designed to meet local needs for teachers to work in urban settings, to serve as a prototype for preparing teachers to work in diverse contexts, and to serve as a model for other teacher education program initiatives. This collaboration between CCSD and UNLV serves as an alternative route to licensure in the state and is a one-year, full-time, field-based teacher education program.

Outcomes: Odell et al. (2001) described this model as unique because of the focus on the diverse learner, the hands-on experiences in urban schools, and the crucial mentoring component. Preliminary evaluation results indicated that the benefits were significant for mentors, interns, and the children they taught.

2. The Aide-to-Teacher Project: The goal of the Aide-to-Teacher Project is to recruit culturally diverse paraprofessional classroom aides to the teaching field. California State University campuses initiated the program in collaboration with seven local school districts. The program provides paraprofessionals with the financial, academic, and personal support they need to continue employment as classroom aides while completing their undergraduate degrees and obtaining their teaching credentials. The university offers coursework after school or on weekends so the participants can continue working. Also, participants have access to tutors when necessary, and student teaching is waived in lieu of supervised teaching. All seven school districts agreed to hire these candidates as full-time teachers as soon as they become eligible.

Outcomes: Of 131 candidates that began the program the first year, 113 remained, for an attrition rate of 14% over a five-year period; this is considered low. At the time of the evaluation, the program was not completed, but 60% of those remaining had reached their junior or senior year

and the grade point average for all students was at least 2.80. Unfortunately there was no comparison group, but results suggested that program strategies were effective in encouraging retention and progress (Warshaw, 1992, cited in Clewell et al., 2000).

Federal efforts. As mentioned above, federal efforts to help with the recruitment of minority teachers usually come in the form of grants offered to institutions that will promote teaching as a career to minority students. However, below we describe a federal program that is funded through the Department of Defense.

Troops to Teachers: The program provides retired and displaced military personal with assistance in pursuing a career in public education; it also helps to fill the teacher shortage gap. Troops to Teachers is primarily a placement agency. Candidates for placement in academic fields must hold an undergraduate degree from an accredited college, while those interested in vocational teaching must prove expertise in their chosen vocation. In addition to job placement assistance, support services include teacher certification programs and a resource link Web site.

Outcomes: Evaluation data indicated that the Troops to Teachers program was effective in recruiting males, former armed forces, and civilian employees into teaching. By 1999, 3,355 participants had entered a career in public education. The evaluation reported that 29% of program participants were minorities compared to 13% nationally (NCES, 1997). Most self-reported that they planned to teach until retirement (67%) or that they planned to be teaching in five years (55%). The program has been effective in recruiting math and science teachers as well (Feistritzer, Hill, and Willett, 1998, cited in Clewell et al., 2000).

Alternative Routes to Teaching

One solution to the minority teacher shortage has been the development of alternative route certification programs. These programs differ from state to state and from one program to another. Forty-four states accept an alternative certificate (Blair, 2003, cited in Ng, 2003). The quality of the programs varies, as does the quality of teaching skills of program graduates (Zumwalt, 1996, cited in Ng, 2003). Concern over alternative licensure has grown since the No Child Left Behind Act of 2001, in which alternate-route and traditionally licensed educators alike can be classified as "highly qualified" (Blair, 2003, cited in Ng, 2003). Because of the lack of clear standards for an alternative certificate, a debate continues on the merits of the programs. Proponents of alternative certification point out that it will diversify the teaching workforce by attracting more men, minorities, and mature workers, whereas opponents argue that it will lower standards and negatively affect student learning (Darling-Hammond, 1999).

In general, these programs recruit individuals specifically to teach in struggling urban schools (Haberman, 1988). Program requirements vary but may include a two-week course, a pre-internship course, a yearlong internship, evening seminars, and teacher mentors. Participants are most often individuals who want to make a career change or are already in the school system as noncertified personnel (teacher aides or secretarial staff).

Most successful minority recruitment programs that provide alternative certification have some combination of the following characteristics:

- A nontraditional talent pool—consisting of teacher assistants, substitute teachers without certification, provisionally certified teachers, and career changers
- Non-traditional admission criteria, allowing for a wider recruitment net
- Candidates that are willing to make teaching a lifelong career
- A majority of participants over the age of 30, many out of college for more than 10 years
- Course schedules that accommodate participants who work
- Enriched multicultural curricula and hands-on teaching experiences

- Modified course offerings with an emphasis on urban education, multicultural education, special education, and science and mathematics
- Intensive focus on the inner-city child
- Financial incentives such as scholarships, loan forgiveness, teaching assistantships, and stipends as well as creative housing plans in which banks, with the assistance of the school system, offer lower interest rates, longer terms for payment, and the like
- A value-added philosophy for teaching in which importance is given to the addition of a multicultural background and urban school experiences (admission criteria often is different and more flexible than in traditional teacher education programs)
- Enhanced social and emotional support services such as individual and group counseling, mentoring, and orientation for families of participants
- Academic support such as tutoring and special sessions arranged when needed on study skills and test-taking skills
- Assistance in preparation for teaching exams (PRAXIS or the state certification test preparation courses)

Alternative routes to certification include a wide range of programs. The Southern Regional Education Board (Bolich, 2003) reported that such programs tend to target a population that is already in the teaching field or is interested in changing careers. Many states require candidates to pass certain basic skills tests or subject area knowledge exams such as PRAXIS. Candidates often join programs offered by colleges, universities, or local education agencies that teach them essential teaching skills. The programs often must be structured differently to accommodate working participants. Weekend and late afternoon classes are thus the norm (Bolich, 2003; Ng, 2003).

The Pathways to Teaching Careers Program

The Pathways to Teaching Careers program (DeWitt Wallace-Reader's Digest Fund) is a privately funded teacher preparation program that has been under intense scrutiny and rigorous evaluation and appears to be a model that works. The evaluation data provided some of the best evidence of the effectiveness of alternative programs. Though Pathways programs differ across the 42 participating sites, a few essential components characterize the programs:

- A partnership between a teacher education program and a school district
- A process that combines traditional and nontraditional criteria to select participants
- A rigorous and innovative teacher education curriculum that is tailored to the needs of nontraditional participants
- Extensive academic and social support systems for participants earning degrees and teaching certificates

The goal of the Pathways program is to increase the number of well-prepared, fully certified teachers working in high-need school districts. Although there are four program strands, the six-year evaluation reported by Clewell and Villegas (2001a) focused on the two strands that were the most comprehensive components of the initiative: the paraprofessional and noncertified teacher strand and the Peace Corps Fellows strand. The paraprofessional strand consisted of 26 programs targeted at recruiting nonprofessional staff in schools and offering them personalized programs towards a teaching certificate. The Peace Corps Fellows strand had 14 projects that identified candidates who had just returned from service, placed them in full-time positions in school districts, and provided two-year, graduate-level programs towards a teaching certificate.

The Pathways to Teaching Careers program evaluation began in 1994. Data was collected through surveys of participants, program staff, teaching supervisors, and principals. Performance assessment data was also collected. Five surveys were administered each year. In the last two years, surveys were given to Pathways graduates who had completed the program three years earlier in order to determine retention rates.

The Southern Education Foundation expanded, funded, and evaluated a large number of Pathways programs in the Southeast. An evaluation report concluded that the Pathways program was effective in diversifying student enrollment in teacher preparation programs in the South (Fenwick, 2001). Seventy-five percent of the teacher candidates enrolled in the program were minorities compared with 15% in programs nationally. The ultimate criterion of success is the staying power of the graduates, and in 2000, over 90% of Pathways graduates were still teaching three years after graduation.

The six-year summative evaluation was designed to determine whether the program met its recruitment goals and retained participants through completion and certification. The evaluation also aimed to determine the quality of the graduates' preparation and their retention in teaching. Results indicated that the program met or exceeded its goals, as follows:

- The program recruited and served 2,593 students in 1999-2000, exceeding its goal of 2,200 students by 18%. In addition, the program increased the number of potential minority teachers by 15%.
- Pathways participants' rate of completion was 75%, exceeding the national rate of completion (60%). After completion of the Pathways program, 84% of graduates worked in teaching jobs in targeted school districts.
- Pathways graduates were perceived to be effective teachers by three independent assessors using three different instruments at three different stages. Surveys were given to experienced supervisors who rated students during internship, principals who rated teachers two years after completion of the program, and an independent evaluator who used a performance-based instrument after one year of teaching. Pathways teachers received higher ratings from the principals and independent evaluators than their counterparts at a statistically significant .0001 level.
- After three or more years of teaching, Pathways graduates were administered a follow-up survey. Results showed that 81% had stayed in teaching for three or more years after completing the Pathways program. This is higher than the national rate of 71% for newly prepared teachers.

The evaluators concluded that recruiting new teachers from nontraditional pools is an effective way of increasing the national supply of teachers; that paraprofessionals are a rich source of potential teachers;

and that recruiting more candidates from racial and ethnic minorities into teaching could help stabilize the teaching force in urban districts.

Dandy et al. (2001) studied successful components in the Pathways to Teaching Careers program at Armstrong Atlantic State University (AASU) and concluded that the Pathways programs have been successful, particularly in the recruitment and training of noncertified personnel who have exemplary work records. The goals of this particular Pathways program were to (1) produce at least 55 certified teachers, (2) enhance and modify the teacher preparation curriculum, and (3) maintain a collaborative working relationship with the school system. Success was based on the percentage of students from the Pathways program who were employed and retained as teachers. In the spring of 2001, 65 students of the 108 selected had completed the program. Of the graduates, 54 were employed in local public schools and had a 94% retention rate over three or more years.

The Role of Community Colleges in Preparing Minority Teachers

The review team located very little research regarding the role of community colleges in preparing minority teachers.[3] This is unfortunate, because community colleges clearly constitute an important resource in the recruitment of minority teachers. According to program descriptions and policy reviews, community colleges enroll almost 40% of undergraduates, and their student bodies are diverse, with higher percentages of minority, nontraditional, and low-income students than four-year institutions (Phillippe & Patton, 2000, cited in Gederman, 2001). Minority students constitute 30% of enrollment in community colleges and 50% in some urban communities.

Banks (2002) reported that community colleges have "a great potential to supply teachers, but remain a largely untapped source of potential." According to a 1999 national survey of college presidents, only about 54% of community colleges had a teacher education program, and many more did not have a clear articulation program worked out with four-year institutions. Historically, students transferring from the

[3] The team was informed of one relevant source too late for inclusion in this report—*Tapping potential: Community college students and America's teacher recruitment challenge*. (2002). Belmont, MA: Recruiting New Teachers, Inc. We will include this source in further editions.

community colleges to partner institutions have had difficulty transferring credits into teacher education programs.

Gederman (2001) made five recommendations for minority teacher recruitment as a result of his review of the literature on the role of community colleges in training tomorrow's school teachers. He suggested expanding the coursework and services currently available at community colleges, working to establish articulation agreements with four-year partners, developing formal teacher education programs, involving students in local schools, and actively recruiting in the service area.

The Role of Minority-Serving Institutions (MSIs)

More than 320 minority-serving institutions (MSIs) educate nearly one third of all students of color in the United States and award nearly one half of all teacher education degrees and teacher certificates to African American, Native American, and Hispanic students. In 1999, the American Indian Higher Education Consortium (AIHEC), the Hispanic Association of Colleges and Universities (HACU), and the National Association for Equal Opportunity in Higher Education (NAFEO) decided to collaborate in order to create greater strength among MSIs of higher learning. The new entity was named the Alliance for Equity in Higher Education, and it published its first report on the minority teacher shortage in 2000. The report addresses the critical role of MSIs in educating children of color, particularly potential teachers.

The report argued that, because MSIs play such an important role in training minority teachers today, both federal and state policies must support MSIs in their attempts to design and develop minority recruitment programs (Williams, 1988; Hunter-Boykin, 1992). Lack of sufficient funding has become a primary policy issue that may well interfere with continued support of recruitment programs. Because MSIs serve many students with low socioeconomic status, they are hesitant to raise college tuition, which leaves them with limited resources. The report contended that revenues at MSIs are 36% lower than the average at all other institutions. As a result, these minority institutions look to institutional endowments and the federal government to help fill the gaps.

Historically black colleges and universities (HBCUs) are included in this group of minority-serving institutions and have played a vigorous role in the development of minority recruitment programs.

HBCUs are institutions established before 1964 whose primary mission is to educate African Americans. Between 1976 and 1996, enrollment grew by 26% and rose to 280,000 in these 103 institutions (National Center for Education Statistics, 2001). In addition, HBCUs provide more than half of the baccalaureate degrees awarded to African Americans, and approximately one third (34%) of all African American teacher education students are enrolled at HBCUs. Disturbingly, HBCUs are awarding significantly fewer education degrees today than in the past (Graham, 1987). Thus, the pool of African Americans available for the teaching profession will be even more limited.

Goodwin (1992) described a collaborative effort by HBCUs to address the critical shortage of minority teachers in United States school systems. Bell South Foundation awarded the Southern Educational Foundation (SEF) a planning grant to address the problem of minority recruitment. SEF formed a collaboration of six HBCUs (Albany State College, Bethune-Cookman College, Grambling University, Johnson C. Smith University, Tuskegee University, and Xavier University) and three graduate institutions (Columbia University, Harvard University, Vanderbilt University) that were committed to working together to increase the number of minority educators. This consortium conducted five activities:

- **The Teacher Cadet Program** brought 20-25 high school students on campus to engage in activities to improve their academic skills, explore the possibilities of a career in education, develop self-esteem, and interact with mentors.
- **The Summer Enrichment Program for Future Teachers** provided support services similar to the cadet program to middle and high school students in a six-week residential program.
- **The Summer Scholars Program** brought 24 HBCU undergraduates to one of the campuses of the graduate universities to take courses, talk with teachers and educators, and explore careers in education.
- **Faculty Exchange and Enrichment** targeted faculty development. The participating consortium members were involved in faculty exchange, co-teaching, and collaborative research.
- **The Minority Leadership Center** was established with the goal of developing minority educational leaders; it provided preparation for African American principals, superintendents, and policymakers.

Goodwin (2001) reported that more than 90% of the 200 Summer Scholars Program participants from 1987 through 1997 were involved in education as teachers, administrators, or graduate students in the field of education. (The review team was unable to locate evaluation results for the other program components.)

Traditional College and University-Based Teacher Preparation Programs

These programs make an effort to recruit minorities by offering financial incentives, emotional and academic support systems, assistance in test-taking skills in general and in particular teacher exams, a culturally enriched curriculum, and hands-on experiences in urban or rural schools. A drawback of traditional education programs is that the teacher education faculties and students are predominantly white, which tends to "disinvite" minority candidates (Ng, 2003).

Concerns for Quality

Some members of the American Association of Colleges for Teacher Education (AACTE) raised concerns about the possibility that, in order to admit more minority candidates, college and university admission standards might have been waived or that targeted programs for minorities might be less demanding than regular entry programs. To answer these questions, AACTE (1992) conducted a national survey of the academic achievement of white, African American, and Hispanic students in a stratified random sample of AACTE member universities nationwide. The survey explored relationships among entering minority students' test scores, successful academic performance, and completion of teacher education programs. A total of 712 transcripts of sophomores in 1985 and 1986 in traditional four-year programs were collected and analyzed. Findings are summarized below.

- While there were differences among institutions in criteria for entrance, students of all races and ethnic groups within the same institution were admitted using the same policies and standards.
- Although there was an achievement gap between entering whites and minorities according to students' GPAs and SAT scores, this gap narrowed as school progressed.
- Grade point average (GPA) was a higher predictor of success than standardized test scores (SAT). This suggested that using SAT scores for making admissions decisions could exclude minority candidates who in fact would have been successful in college programs.

- No significant link was found between race and ethnicity as a single factor and the grades that students earned in their respective courses.
- Completion data by race and ethnicity indicated higher attrition rates for African Americans than for their white and Hispanic counterparts.

A Sample of Other University-Based Programs

The review team selected a diverse sample of programs from 18 summaries included in Clewell et al.'s literature review of teacher recruitment programs (2000), conducted under contract to the U.S. Department of Education. These are summarized below.

South Carolina Program for the Recruitment and Retention of Minority Teachers: This program recruits and financially supports nontraditional students in the education program at South Carolina State University. Recruiting efforts target teacher aides in the state as well as technical college students, offering forgivable teacher loans to students who qualify. The long-term goal is to place minority teachers in critical-needs schools in rural areas. The three components of the program are

- Education Entrance Exam Intervention Seminars, which are designed to prepare the nontraditional students for the reading, mathematics, and writing sections of the state-required Education Entrance Exam;
- the Satellite Teacher Education Program, which enables students to take most of their initial coursework at sites closer to their homes and offers evening courses to accommodate working students; and
- the Weekend College, which offers Saturday and Sunday courses on the university campus to accommodate students who work full time.

Outcomes: Program data indicated that, from 1991 to 1996, between 10% and 40% of the students involved passed all three parts of the exam; however, participation in these activities declined

during this same period. The evaluator described recruitment for the technical college transfer as weak. By 1996, 26 teacher aides had completed their degrees and were teaching. No program teachers were teaching in critical-needs schools or fields. (Bond, 1997, cited in Clewell et al., 2000)

North Carolina Teaching Fellows Program: The Fellows Program is a four-year undergraduate teacher education program that is offered at 14 of North Carolina's colleges and universities. The primary program goal is to recruit North Carolina high school students into teaching careers by providing an academically and culturally enriched curriculum. A secondary goal is to recruit and retain greater numbers of male and minority teachers (Arnold & Sumner, 1992). The curriculum includes school visits, hands-on investigations into the issues that define public schools, monthly seminars, and courses on leadership, at-risk students, and cultural diversity. Every year the program awards 400 four-year scholarships worth $20,000 each to outstanding seniors who agree to teach for four years in a North Carolina public school. Support services include an academic advisor and mentor in liberal arts and a teacher education advisor.

Outcomes: The average Scholastic Assessment Test (SAT) score of program participants was 240 points higher than that of other North Carolina college-bound students. Participants also had higher GPAs. These data attest to the quality of students and to the effectiveness of the recruiting strategies. Compared to all teachers in the United States, the North Carolina Fellows were more likely to be males and minorities. In addition, a survey of principals who had hired current teaching fellows reported that the teaching fellows rated higher than other teachers in the following categories:

- Adjusting to the teaching environment
- Student discipline
- Instructional methods
- Working with parents
- Site-based decision making
- Student assessment
- Effectively working with diverse students

On the other hand, it was not clear from the data whether they were as committed to remaining in teaching as other teachers (Berry, 1995, cited in Clewell et al., 2000; Arnold and Sumner, 1992).

California State University Teacher Diversity Programs: The goal of this program is to encourage racial and ethnic minority populations to attend one of the California State campuses and earn a teaching certificate. Recruitment efforts and intervention strategies vary from campus to campus, but all programs receive grants from the state lottery fund to support stipends and scholarships, paid tutoring internships, and paid teacher assistant positions. Some participants receive financial support to attend community colleges, four-year degree programs, and fifth-year teacher-preparation programs. In addition, participants receive academic support and basic skills preparation focused on remediation in subject matter content and the passing of competency tests. Other supports include tutoring, academic advising, career counseling, and supervised field experiences guided by a mentor.

Outcomes: One of the objectives of this program is to prepare recruited teacher candidates to pass the competency tests required for teacher certification. Studies have shown that the failing of these tests is one of the major reasons for the decline in the number of minority candidates. Data indicate that between 1989 and 1993 there was an increase in the percentage of credentials earned by new minority teachers. However, while there was an increase of 40% for Asian Americans earning teaching credentials and 28% for Hispanics doing the same, there was a decrease of 13% for Filipinos and 20% for African Americans earning those credentials. Measures of program effectiveness did show that, overall, the California program has improved the ethnic diversity in the newly credentialed teacher pool, but not enough time has passed to assess long-term program outcomes (McLevie, 1994, cited in Clewell et al., 2000).

Weaknesses in the Available Research

In their report to the United States Department of Education, Clewell et al. (2000) contended that strategies and program models could be identified and replicated if they were rigorously defined and evaluated. They identified two key issues in evaluating teacher recruitment programs: (1) setting clear, measurable goals and appropriate outcomes and (2) agreeing on what data should be collected and in what form across all participating institutions.

On the other hand, this review revealed few sources that met Clewell et al.'s criteria, and the quality of program evaluations reported in their summaries appeared to be quite variable, as were the findings. Given limited evaluation data and the difficulties of identifying a national random sample of programs, it is difficult to draw conclusions about the effectiveness of the programs that are reported here.

It appears from the literature that evaluation has proven challenging for these programs, at least in part due to the limited funding usually provided for evaluation. The fact that the Pathways program was so well documented is attributable to its generous funding base, but such investments are relatively uncommon. Essentially all of the programs reviewed for inclusion in this section had long-term goals, but many failed or were unable to collect or report data reflecting whether or not these had been attained. Therefore, although many programs seem promising, we have only limited evidence of their effectiveness.

However, there are many programs that appear to have merit based on the quality of their designs and the outcome data they have generated. Additional documentation of programs through surveys, interviews, or case studies, as well as retention data, is still desirable in order to develop replicable preparation models for minority subgroups.

Alternative programs have become popular and are multiplying as schools and institutions are beginning to start programs to "grow their own" candidates for teacher preparation. However, the quality of some of these programs is being questioned, and additional evidence is still needed to confirm what program components and characteristics are most important to preparing minorities for careers in teaching.

The roles of community colleges and minority-serving institutions are underestimated in both teacher preparation research and public policy. Much more needs to be known about their unique roles in serving minority communities and how their resources can be supported to increase a well-prepared minority teacher population.

Research Gaps

Assessing the effectiveness of these programs calls for longitudinal data that follows the careers of the participants, even though the great number of possible variables that affect outcomes would be difficult to control for. Longitudinal case studies of students as they enter college, declare their majors, graduate, begin their careers, and continue to teach would be valuable.

There is a dearth of information regarding programs and outcomes of minority recruitment at the community college level. Because 21% of teachers who graduated in 1992 began their education at a two-year institution, federal and state agencies might consider two sorts of investments: (1) disseminating and replicating model programs based on the best available knowledge and (2) investing in systematic research regarding retention of minority students in these programs, as well as their continued success in subsequent teaching placements.

There is a need for more research focused on the effectiveness of alternative route certification. A large-scale study or databank of rigorous program and student characteristics could support meta-analyses of these programs' outcomes. Creating a regional pool of candidates for alternative programs and random assignment to programs among a group of cooperating colleges would add some explanatory power to any subsequent findings of program effectiveness.

There is a lack of information about promising urban high school internship programs, which seem to be underrepresented in the material reviewed. A diverse sample of case studies of these programs might be very productive, with implications not only for urban settings but possibly for rural settings as well.

Developing and evaluating programs that link community colleges with both high schools and four-year institutions would appear to be a natural step towards building career pathways into teaching for minority students. Further documentation and evaluation of these designs and their results would be helpful in supporting more systematic research.

The teacher narratives presented in Question 4 testify to how the voices of minority preservice teachers are not given much audience in many college programs. It would be of both theoretical and practical interest to document the characteristics of preservice programs that acknowledge and build on minority students' experiences in ways that encourage their persistence in these programs. Both case studies and design studies of preservice programs for minority teacher candidates would be useful in developing models of successful strategies for supporting such candidates.

Question 4: What are the experiences of minority teacher candidates in preservice programs?

Description of Current Research

The research base concerning minority teacher preparation is small and not comprehensive in scope. In addition, research methods and small sample sizes in interpretive research make it difficult to determine specifically what teacher candidates are learning. Those studies that do exist focus on different aspects of the teacher preparation experience or have been designed for limited purposes or from narrow perspectives. The studies also vary greatly in genre; most are qualitative and run the gamut from surveys and case studies to interviews and recordings of reflections, among others. The sampling in the studies ranges from one individual in a local setting to as many as 3,000 subjects (Sheets & Chew, 2002; Darling-Hammond et al., 2002). Since there are so few long-term quantitative studies with evaluation data, we have to consider descriptions of individual studies. Despite limited scope, such studies still address larger themes that recur in the available literature about minority teacher candidates. Questions of what is directly relevant in programs and of the impact of programs on teacher candidates and their eventual students have not been tracked.

Some of the research studied subjects who were still in the preparation process (Tellez, 1999; Quiocho, 2000; Siraj-Blatchford, 2003; Au, 2003; Sheets & Chew, 2002), while other studies focused on teachers currently working in the profession who indicated how well they felt their preparation programs had served them (Jorissen, 2003; Darling-Hammond et al. 2002). Some research involved the different phases of teacher preparation at an institution of higher learning, while other studies focused on alternate routes of teacher preparation. There is also some research that examined the program characteristics of projects designed specifically with the idea of supporting minority teacher candidates (Dillard, 1994; Quiocho & Rios, 2000; Sheets & Chew, 2002; Au, 2003). We have been unable to find any studies that included a significant sampling over a significant period of time that addressed the experiences of minority teacher candidates in a comprehensive manner, looking at and comparing the various teacher preparation program models. For example, we don't know how the experiences of students who participated

in middle or high school programs compare to the experiences of students who entered traditional programs at institutions of higher education; we also don't know how either of these experiences compared to students' experiences in alternative preparation programs or those that support individuals changing from another career to teaching, such as career ladder programs.

Recurring Issues and Themes Found in the Research

The Silence of Minorities

Despite all that the research does not tell us, there are certain common themes that do resonate in the available studies; we will explore the most salient of these here. One persistent thread is that minority candidates often perceive themselves to be invisible, silenced, or powerless in traditional teacher preparation programs, including during the practicum phase (Paillotet, 1997; Sheets & Chew, 2002; and Dillard, 1994). Some students reported that they felt excluded from the curriculum just as their personal and cultural experiences were excluded; additionally, they felt that these experiences were seen not as diverse but often as a deficit by majority-group students and faculty who believed their own experiences to be "normal." In "Why We Need to Re-Think Race and Ethnicity," an article from *Educational Researcher*, Lee (2003) addressed the issue of how "scientifically determined normative development continues to be the purview of communities of people of European descent."

In fact, minority teacher candidates often report that most of the content and philosophy of their preparation programs seems to be driven by this monocultural perspective. A basic premise of Guyton, Saxe, and Wesche's 1996 study was that "diverse students may experience teacher education programs differently and that knowing what their experiences are may help to inform teacher education programs" (p. 643, abstract). Teacher education programs have not often taken up this suggestion for utilizing minority students' experiences.

In her extensive review of the literature from 1989 to 1998, *The Power of Their Presence: Minority Group Teachers and Schooling*, Quiocho (2000) wrote about the "silencing of voices," the need for "questioning schooling," and the necessity of "paying attention to minority voices … as a … catalyst for change" (p. 520).

Quiocho observed that her review showed the power of the minority group teacher, but it also revealed the many obstacles these teachers faced in fully realizing their potential. Like many other researchers reviewed for this document, Quiocho proposed the philosophy of social justice as the framework for building strong recruitment and retention programs.

In her 1997 case study *I'm Really Quiet: A Case Study of an Asian Language Minority Preservice Teacher*, Paillotet focused on the programmatic experiences of Vivian, an Asian language-minority preservice teacher who was in many ways typical of other individuals highlighted in recent literature about minority teacher candidates. Vivian often was less apt to speak up or to experiment with innovative teaching techniques. In order to survive and maintain a good relationship with mentors or host teachers in her practicum, she—like many minority teacher candidates in other studies—tended to be more traditional in her approach. In their studies, Tellez (1999), Siraj-Blatchford (2003), Quiocho (2000), and Jones, Maguire, and Watson (1997) reported similar findings with their subjects in terms of their conservative approaches during practicums. However, Vivian was able to confide in the researcher (who eventually became her mentor) about her issues with speaking up and communicating with faculty and supervisors: "I was always taught to respect teachers—not speak up …. When they confront me or ask me to justify what I'm doing, I know it inside, but I just freeze up and get really quiet. I don't stand up for myself, so I think they see that as not getting it" (Paillotet, 1997, p. 675).

Au (2003) recorded a similar remark from a student in *Cultural Identity and Learning to Teach in a Diverse Community*: "I experienced what it was like growing up in a classroom environment that wasn't emotionally safe for me …. As I grew up, went to high school, and continued on to college, I realized that I had difficulties asking questions or giving my opinions about certain things because I was afraid of being ridiculed and humiliated …. At times when I did have to say something, I always felt like people were laughing at me" (p. 199).

In a paper about a special preservice recruitment program that she designed for 21 talented minority students, Dillard (1994) addressed the silencing of minority voices and the changes that are necessary if programs are to be more inclusive: "Silence protects no one. I wanted to share this belief with these students of color through telling my particular and personal stories as an African American teacher and

encouraging them to share their stories as well. I wanted them to see that if one continues to be silent when anyone tells racist or sexist stories, that person may signal passive agreement with the telling. When individuals find their understanding or realities of an event missing from a discussion, they must add their definition to the discussion to provide a full telling. If one feels, one also knows; this knowing is inherently no less valuable or truthful than academic theory" (p. 11). In response to the issue of silencing and alienation, Dillard designed her 1992 summer research institute to focus specifically on the needs of the prospective minority teacher.

Dillard (1994) also stated, "For these students of color, the curriculum had to be more than information and materials about graduate study and careers as teachers; they had to be the curriculum, with a full acknowledgment of their humanity as the place from which they might ultimately see themselves as teachers who could ultimately affect change in schools" (p. 12). She further asserted that for students of color to successfully enter into and contribute to the field of teaching, discussions about recruitment have to take into account the multiple ways these individuals "participate, see, and are in the world" (p. 12). Dillard's perspective echoes Trent's (1990) assertion that the multiplicity minority students bring with them should form the basis for a just and democratic ideology in the recruitment and preparation of teachers of color. Dillard gave the example of a young Mexican American student who voiced her concern during a recruitment program: "If I come to your university, will I be more than a number? I guess what I mean is, if I come to WSU, can I be a Mexicana and a teacher?" (p. 9).

As stated previously, studies on the experiences of minority teacher candidates have suggested that teacher preparation institutions do not value these students. What they can offer to educational institutions or teacher preparation programs as minorities with diverse cultural backgrounds is rarely acknowledged, developed, or infused into their coursework or practicums. This neglect is despite the fact that these individuals were in all likelihood recruited because they are minorities and are often expected to work with minority students with backgrounds similar to their own. The student population in school systems in this country, as well as globally, is becoming increasingly diverse, especially in urban areas but also in many rural areas. Many public documents have reported that these diverse populations are not being well served. Most teachers who are currently teaching these students are from mainstream backgrounds; although these teachers might want to teach these students effectively, they are often

unprepared to do so. In addition, faculties at institutions of higher learning lack the materials and teaching strategies to address the needs of minority students and prospective teachers (Sheets & Chew, 2000; Quiocho, 2000). Researchers have reported that educators, social scientists, parents, and community members have questioned the suitability of current curricula and teacher training as well as the racial and cultural composition of teachers and school administrators (Dlamini, 2002).

As a consequence, much of the recent literature focuses on the intertwined issues of critical pedagogy, racism, justice, equity, and diversity (Guyton et al., 1996; Dillard, 1994; and Dlamini, 2002) as well as the related topic of multiculturalism (where it exists in teacher preparation programs). Quiocho and Rios (2000) reported that, in the articles they read for their review, it appeared that researchers were working to minimize the inequalities that minority teachers experience by casting a critical perspective on the social, cultural, economic, and institutional barriers that these teachers must overcome. Quiocho argued that the critical science perspective inspires the greatest hopefulness and promise for this continued line of inquiry.

Guyton et al. (1996) also added that although the literature on teacher education is full of statements about the need for diversity in the teaching force, the pool of candidates will not become more diverse unless colleges of education actually draw more minority students into their programs. "It is not just an issue of attracting people but also supporting success, of making everyone feel welcome and comfortable and valued in all aspects of the program" (p. 651). Similarly, Sheets and Chew (2002) found that "the explicit recognition of the psychological, academic, and pedagogical benefits from ethnic studies courses taken by these teachers [a group of Chinese American teacher candidates in a Title VII preparation program they studied], and their ability to transfer this knowledge to practice, may signify that the content knowledge (knowledge of culture) in diversity courses was perceived to be missing" (p. 139).[1] This recurring theme was also highlighted by Thompson and Carter (1997, as cited in Carter, 2000): "… few educational programs equip their developing professionals with the knowledge, attitudes, and skills that allow them to work the racial boundaries that exist in our society."

[1] The Chinese American teacher candidates based their distinctions between "ethnic studies" and "diversity" courses on the substantive content and the context (such as demographic of student population in class (p. 131, 132) from which each course was taught. Diversity courses are taught from the majority white perspective and were focused on introducing teacher candidates to various forms of difference (p. 134). On the contrary, ethnic studies courses are taught from the perspectives of communities of color and delve more into social issues and their impacts on these communities (p. 135).

Racism, Multicultural Education, Social Justice, and Critical Pedagogy

Racism or the perception of racism interconnects with the aspect of invisibility or silencing that surfaces in the perceptions of many minority teacher candidates and faculty of color in higher education (Siraj-Blatchford, 2003; Jones, Maguire & Watson, 1997; Tellez, 1999; Osler, 1994, cited in Tellez, 1999; Rodriguez & Sjostrom, 2000).

Thompson and Carter (1997, in Carter, 2000), Solomon (2000 and 2001) and Dlamini (2000) have all explored race and its impact on education in general and in teacher preparation programs specifically. British researcher Siraj-Blatchford (2003) argued that more studies are needed to document the numbers of black students who do not complete coursework, are failed, drop out of teaching, or never go into teaching due to perceptions of race discrimination. In their recent study of a Title VII-funded teacher preparation program for Hmong candidates (people from the mountains of Laos who came to the U.S. as refugees after the Vietnam Conflict), Root et al. (2003) reported that many of these students experienced a lack of language services, producing feelings of alienation as well as discrimination. In his study *Teacher Candidates' Racial Identity Development and Its Impact on Learning to Teach*, Solomon (2001) addressed the urgent need for more comprehensive antiracism curriculum in teacher education and teaching in general (p. 1); his study discussed what he calls "dysconscious racism," which he describes as a phenomenon in which teachers and administrators (those in positions of power) unconsciously implement and perpetuate institutional policies that legitimize assumptions and stereotypes about racialized minorities. He also gave examples of how some majority teachers view diversity as a topic of "otherness" in which "whiteness … is … normalized and diversity and multiculturalism is meant to focus on those not in the 'dominant' culture" (p. 19). He cited as an example one candidate who did not question her own Eurocentric teaching practices and assumed them to be the norm. Solomon analyzed how candidates responded to the theory and practice of race, racism, and antiracism in their scholarship; he also explored how the development of attitudes, knowledge, and practices can be used to prepare candidates to work for equity and social justice.

Solomon also noted how time was an obstacle in minority teachers' growth as antiracist educators. Teacher candidates perceived diversity issues as an add-on to the work of learning to teach; consequently, they were reluctant to take the extra time to focus on developing their skills as effective antiracist educators. As an example, one student was quoted as saying, "So many things you have got to do and you have to

decide where your focus lies" (Solomon, 2001, p. 35). In a separate three-year study, *Exploring Cross-Race Dyad Partnerships in Learning to Teach*, Solomon (2000) uncovered an institutional culture that "interpreted racial difference as deficit, generated paralyzing anxiety for candidates of color, marginalizing them in the communication process" (p. 953). These findings are not new; Trent (1990) also advocated for reform in this area. In his study *Race and Ethnicity in the Teacher Education Curriculum*, he stated, "It is out of respect for the lived history of minorities in America that I argue for the necessity of including scholarship on race and ethnicity as a core part of the preparation of teachers" (p. 361).

Despite the urging of researchers such as Trent, the acceptance of multiculturalism and the method of implementing diversity have been problematic; the lack of multicultural perspectives in the curriculum is often cited as a major barrier to reform in teacher education. Many researchers do in fact point to the persistence of obstacles to reform in teacher preparation, such as resistance from those in authority to change school culture; these researchers also highlight the urgent need to improve all teachers' underdeveloped skills as a way to combat inequities and achieve social justice through critical pedagogy for all students in our school systems (Quiocho & Rios, 2000; Carter, 2000; Hollis & Ball, 1999; Cockrell, Placier, Cockrell, & Middleton, 1999; Dlamini, 2002). Hollis and Ball found that the best setting for teaching and learning is facilitated by teachers "who accept and embrace culture and ethnicity as important factors in school learning" (p. 887). Giroux (1992) talked about using diversity as an analytic tool for students "to examine the ways in which dominant cultures create practices of terror, inequality, and exclusions" (cited in Dlamini, 2002, p. 62).

More teacher preparation programs are now offering multicultural strands, courses, or clusters of courses. Arredondo's (1993) definition of multiculturalism is "a broad-based construct that is not only relevant to all cultural groups—including gender, age, class, ethnicity, religion, sexual orientation, and ableism—but also to the complexity of all people based on their personal dimensions of identity" (cited in Rodriguez & Sjostrom, 2000, p. 4). Although multicultural courses are sometimes the only arenas in which minorities see themselves and their realities represented, the classes are also often perceived as separate from the core curriculum. Minority students and faculty have reported that these courses are often superficial in nature or too short in duration; additionally, they may not be mandatory. The course content is often seen as the domain of ethnic and racial minority students and does not explore all ethnic and racial identities.

This last aspect, in which minorities are seen as the only subjects of multiculturalism, is a theme that cuts across many of the studies cited in this paper. Because minorities become the magnified subjects, both majority and minority group members often feel intimidated to speak or bring up issues that make them feel uncomfortable. What is said or left unsaid, and who gains or loses in these classes, often seems to depend on the majority-to-minority ratio of students in classrooms.

Students in Sheets and Chew's (2002) study *Absent from the Research, Present in Our Classrooms: Preparing Culturally Responsive Chinese-American Teachers* admitted that they felt more comfortable discussing issues such as racism and discrimination when there was a critical mass of minority students providing them with a safer forum to voice their opinions; these Chinese American students also asserted that multiculturalism was not infused throughout the coursework of the teacher preparation program and was therefore seen as an add-on. In addition, the findings indicated that candidates felt that the valuable cultural knowledge they had gained through personal experience and in ethnic studies might be the content they perceived as missing from their multicultural education coursework. Rodriguez and Sjostrom (2000) reported similar findings in their paper on a multicultural approach to mentoring.

Sheets and Chew (2002) also reported that some Chinese American students in the study felt invisible, silenced, unheard, or overwhelmed by the European American students even during multicultural courses. Some Chinese American students believed that the course was designed for this dominant group. Below is a representational sampling from the Sheets and Chew study concerning four Chinese American students' perceptions about their multicultural course experience:

Yuan: "The perspectives, experiences, and backgrounds of other students of color made it a great learning experience. We were able to express ourselves freely without being concerned. Our similar background motivated us to open up and honestly discuss controversial topics. Working collaboratively in groups gave us an opportunity to develop a strong sense of social belonging" (p. 132).

Wanda: "I am very curious about what white students think about this class. I sometimes wonder if white students are just being polite. I don't think most white students can understand the importance of multicultural education. I don't feel many of our discussions are genuine because I am not sure that

in this setting people really express what they think. They don't want to make anyone feel guilty or uncomfortable" (p. 132).

Tom: "They keep looking at me. I am not a cultural ambassador. I didn't feel like educating them. I just wanted to complete this course. They need to take ethnic studies courses. We were way beyond them. Since I didn't talk to them, I wonder if they felt uncomfortable. The things they talked about were just on the surface. They were always trying to get deep into it, but they really can't" (p. 132).

Hibiscus: "There should be prerequisites for this course. Someone would ask a question and my teacher would say, 'What would you do?' It ended up like we were teaching the course. Maybe the teacher didn't have enough experience or maybe she'd never been in that type of situation. We never really addressed whatever the problem was" (p. 132).

Mentoring as a Factor in Programs for Minority Teachers

Mentoring is another area that researchers and students have identified as a key support for minority teacher candidates. However, this is yet another area where minorities are underrepresented, because most institutions of higher education are majority-culture dominated. In addition, many faculty in teacher education programs are not knowledgeable about diverse cultures and often do not know how to apply the foundations of teaching techniques and strategies appropriate to the needs of the increasingly diverse student population in school systems (both urban and rural).

Also, issues of diversity may not be explored realistically, and multicultural content is often treated superficially (Rodriguez & Sjostrom, 2000). In their paper *Faculty of Color in Teacher Education: A Multicultural Approach to Mentoring for Retention, 2000 and Beyond*, Rodriguez and Sjostrom (2000) explored the various issues related to using diversity to prepare, mentor, and retain the next generation of teachers of color. They also maintained that mentors frequently seek out mentees who are similar to themselves—men tend to mentor men, women tend to mentor women, minorities tend to mentor other minorities—but that in reality there are too few minority faculty to adequately accomplish the latter. Rodriguez and Sjostrom focused on the critical need for mentoring and the implications of not mentoring culturally diverse students who find themselves in predominantly white institutions. They

examined existing mentoring models and proposed strategies for mentoring to diverse students; they also addressed the lack of true multiculturalism in many programs, echoing Quiocho's (2000) idea of "questioning the institution" (p. 520).

Similarly, in *Mentoring Across Cultures in Teacher Education: A Cross-Cultural Perspective for Retaining Minority Students in Teacher Education*, Doston (1994) reminded us that numerous research studies suggested the need for greater cultural diversity in the teaching and administrative ranks in public schools, and that, despite the good intentions of universities over the (then) past decade, there was significant under-representation of minorities. According to currently available research, this situation still exists 10 years after Doston's original study. Doston claimed that the reality of the underrepresentation of minorities demonstrated the need for white faculty to accept responsibility for serving as mentors to minorities in teacher education programs; he also included suggestions (and do's and don'ts) for what one can do as a cross-cultural mentor (p. 80).

Perceptions of Minority Teacher Candidates about Their Roles as Teachers

It is clear that teachers in general feel unprepared to serve minority students well. Too many students of diverse cultural and linguistic backgrounds are failing academically and ending up poorly prepared to function in today's job market. In addition, minority teacher candidates are often faced with the realities of their own financial, cultural, or linguistic differences; a lack of available or appropriate mentoring services; and a lack of sufficient time to complete preparation requirements—all of which makes their route to completion of teacher preparation programs more difficult. Their often-reported perceptions of racism and of feeling "less smart" and powerless (especially in teacher practicum contexts) only add to the dilemma. However, many teacher candidates—whether minority or majority students—feel they are not prepared to appropriately apply the knowledge they have gained to the realities of diversity in current school systems (Sheets & Chew, 2002; Solomon, 2001; Au, 2003; Paillotet, 1997; Hood & Parker, 1994; Kanpol, 1992, cited in Quiocho & Rios, 2000).

Despite barriers within teacher preparation programs or feelings of not being prepared, minority teachers often report that they feel that they can relate to their students because they may come from similar places and share common experiences. For minorities in the studies by both Su (1997) and Tellez (1999),

becoming a teacher was an important accomplishment and honor. In both studies, the insider experiences these candidates brought with them were kept outside, not incorporated into the core preparation they received. Other studies by Guyton et al. (1996) and Su (1994) indicated that minority group teachers were aware that they would be role models and that they were more than willing to accept this responsibility; they also voiced a readiness and enthusiasm to be agents of change in schools. Kanpol (1992) found that teachers' social and cultural experiences were critical to the way they perceived their roles as teachers and that this perception influenced their teaching practices (cited in Quiocho & Rios, 2000). The teachers' sense of being subordinated by race, class, gender, and immigration experience established their empathy for their ethnic minority students.

On the other side of this issue, in Gordon's (1994) study *Why Students of Color Are Not Entering Teaching: Reflections from Minority Teachers*, students revealed that one reason they weren't entering the profession was fear of being perceived negatively, of being looked upon by other teachers as being "less than them" (cited in Quiocho & Rios, 2000, p. 497). Prospective minority teacher candidates were unwilling to risk a negative professional image when they had other opportunities available to them elsewhere. Perceived racism in educational institutions appears to be a determining factor in minority students choosing other occupations (Guyton et al., 1996; Su, 1994; Kanpol, 1992; Gordon, 1994; Green & Weaver, 1992; Page & Page, 1991). Even when minority teacher candidates remain in teacher preparation programs, their valuable insights or input may remain unexpressed because they feel excluded, invisible, or silenced. Minority teacher candidates are often fearful about sharing their experiences; they may not be welcomed to communicate their thoughts on issues such as racism, equity, and social justice even though institutions of higher learning may espouse these high ideals in rhetoric, mission statements, and course outlines. And, as stated earlier, several researchers indicated the sense of powerlessness that minority teacher candidates often perceive, especially during practicums in schools where traditional curricula are in place and candidates are not encouraged to use their cultural knowledge to develop culturally appropriate materials for their diverse students.

Quiocho and Rios (2000) also reported that the number of minority-group individuals prepared to teach will remain low as long as there are barriers to certification, such as negative perceptions of the profession, inequities in testing and admission, and incongruence of their experiences with traditional teacher education

curricula. They stated, "What is needed is a multicultural education curriculum coupled with the power of the presence of minority-group teachers and the cultural mediation abilities they bring to their work" (p. 523).

Assessment

Another concern in the research available on minority teacher candidates is how they are assessed—in other words, how teachers should be evaluated for their on-the-job performance or competencies. Traditional ways of evaluation can be biased against minority teachers because of cultural or linguistic differences. Some researchers have challenged the ways in which minority teacher candidates are assessed, suggesting that there is a need to find alternate methods of assessing what teachers can really do (Paillotet, 1997; Au, 2003; Sheets & Chew, 2002; Root et al., 2003). They have suggested that assessments such as oral analyses and discussions of teaching videos can be explored as alternatives or supplements to conventional standardized procedures.

Experiences of Minority Candidate Teachers in Various Programs

This section will take a brief look at a few teacher preparation programs; some features of these programs appear to have merit for minority teacher candidates, and some may serve to inform the creation or modification of other programs to better serve candidates' needs. The research that will be considered in reference to these programs is by Dillard (1994), Root et al. (2003), Jorissen (2003), and Darling-Hammond et al. (2002).

In the summer of 1992, Dillard (1994) planned and directed an eight-week summer research institute, *Opening Doors: The World of Graduate Study for Minority Students in Education*, that provided 21 talented students of color with an opportunity to become teachers; it was a rigorous preservice program offering students ongoing support as well as activities for self-study (such as personal perspective and identity awareness exercises). Goals of the program were explicitly stated, and components included mentoring relationships with faculty in order to undertake a major research project. Students were provided with (1) a better understanding of graduate study in education and with counseling on how to pursue it, (2) exposure to rigorous research activities in a variety of social and natural science disciplines, and (3) and the academic and career counseling necessary to pursue their teacher certification requirements.

Dillard had all her students write autobiographies and share journals with a staff responder; these helped the students develop a personal and professional support system. Students were also responsible for carrying out a research project. Dillard took an active role in many of the activities, examining her own practices throughout the program. One key goal was to demystify the graduate school experience. One student stated, "This week I have, through several experiences, come to find out how much confidence and faith some of my peers, teachers, and co-workers have in me" (p. 10). Dillard also incorporated videotaped transcripts and interviews in order for students to share their program experiences on a satellite institute focusing on educational issues with at-risk students. She stated that the program was rigorous but also "one that listened to and valued the tremendous potential and energy which people of color represent for all of the nation's students and schools" (p. 17).

One year later, 11 of the 21 participants were enrolled in or in the process of enrolling in graduate school in the field of education (K-12 and higher education), 3 were teaching in public schools, and 2 were in bilingual programs. The remaining 6 were in their senior year of undergraduate study; 2 were employed at Ohio State University as African American and Native American student recruiters, and 1 was teaching in Colombia, South America. After completing the program, one student wrote, "Now, this is who I am and who I want to be, an inspiration to kids. That's why I'm going to teach, so I can help children be who they are from the age of 10 rather than from the age of 20. This experience is something I needed when I was 18! I'm going to push toward my master's. We need more intellectual understanding to instill power, pride, confidence and self-esteem in our babies, so they won't be 32 years old looking for themselves. That's a horrible place to be. After this program I need to keep going. I need to, we need to; die trying, but do it" (p. 17).

Jorissen (2003) produced a qualitative study on six African American sixth-year teachers in two Midwestern urban school districts who had completed a long-term alternative-route preparation program. Findings indicated that the program assisted them in successfully making a transition from other careers into teaching. They reported that the structures and relationships that helped them develop competence and identity included effective instruction in content and pedagogy and close professional relationships with their mentors and their cohort. Findings also indicated the importance of addressing the developmental needs of individuals undertaking career transitions into teaching. Keys to the success of the program included the fact that it was long term, collaborative, and hands-on (e.g., provided intern

experiences that were closely related to coursework at the university and school district levels). This study revealed that one step toward meeting the challenge of preparing minority teachers without compromising quality is to listen to the voices of alternative-route teachers who have stayed in teaching.

On the other hand, Darling-Hammond et al. (2002) found in their survey study *Variation in Teacher Preparation* that teachers prepared in alternative-route programs left teaching at a greater rate, that these programs tended to be short term, and that the relatively short length of the programs seems to be a key variable in lack of retention. The study by Darling-Hammond et al. examined the experiences of 3,000 beginning teachers in the New York City school system. Findings indicated that those recruits who had undergone short term programs didn't seem to be prepared well for curriculum development, teaching methods, classroom management, or motivation of students. The researchers also pointed out that an emerging body of research identified the characteristics of exemplary preparation programs: (1) duration from 9 to 15 months, (2) intensive and extended field experience of at least 30 weeks in the classrooms of expert teachers, and (3) integration of these internships with corresponding strong academic and pedagogical coursework. These three characteristics are congruent with Jorissen's 2003 findings.

In addition, this study indicated that most successful programs were school-based ones in which college faculty and teachers collaborated in delivering the internships and practicums. In fact, the researchers found that teachers prepared in formal programs felt better prepared than teacher candidates who took a series of courses from different institutions; the latter teachers in turn felt more prepared than candidates entering the field through alternative programs or pathways. Those who entered without primary experience or training felt the least prepared. Teachers' sense of preparedness also related to their plans to stay in the profession and to their sense of efficacy and responsibility. Even though a relatively small sampling of minority teachers participated in the survey, findings indicated that minority teachers in teacher preparation programs often felt more able than their non-minority peers to meet the needs of a diverse student population.

Another significant outcome of this study was that most teachers—whether they had completed a teacher preparation program, taken courses in teacher preparation outside a formalized program, or entered teaching through alternative-routes—did not feel prepared to use technology or to teach English

language learners. Darling-Hammond et al. (2002) indicated that more research on the effectiveness of program pathways is necessary: "If our society really expects all students to learn at high levels, as current rhetoric suggests, a more deliberate set of strategies for ensuring that their teachers gain access to knowledge will be needed" (p. 298).

In their descriptive study *Attrition of Hmong Students in Teacher Education Programs*, Root et. al (2003) addressed attrition in two Title VII bilingual education career ladder programs; the Hmong candidates included paraprofessionals and traditional-age college students working toward teacher certification in Wisconsin. Although these programs had many positive features to support the recruits, they are included in this section because the study focused on program characteristics that could be added to further support minority teacher candidates, with specific suggestions for the Hmong students for which the programs were designed. Findings indicated that lack of language services, discrimination, and alienation were prominent issues faced by many Hmong college students. In addition, many encountered difficulties in the program due to the amount of reading assignments, their reluctance to use counseling services (a cultural issue), and some students' lack of preparedness for college-level work. Financial constraints and family responsibilities also contributed to high attrition rates. Older students may have faced additional academic and linguistic as well as financial difficulties.

The study recommended that at the time of application candidates be provided with realistic assessments of their student-family finances, their obligations to the program, and the time needed to complete it. Other recommendations included adding more mentoring and support components that take language and culture into consideration, adjusting the timeslots of course offerings, increasing financial support, and making changes in guidelines for allowable expenses. One positive feature of the programs was that their graduates served as both mentors and role models for those still in school; researchers recommended that this informal system be integrated into increased involvement with teachers at the school level. The program's components of providing strong and culturally relevant mentoring possibilities, increasing minority faculty in programs, and providing multicultural perspectives would be helpful to most students embarking on teacher preparation programs.

Weaknesses and Gaps in the Research

Most research on minority teacher preparation—and teacher preparation research in general—is not funded by outside agencies. This typically means that the research is limited to a single institution or program, because teacher education researchers can most easily use data generated by their local teacher education efforts. The most comprehensive study cited in this paper was Quiocho and Rios's (2000) literature review, which looked at minority teacher candidates and minority teachers. Darling-Hammond et al.'s (2002) study had as its sample 3,000 new teachers in the New York City public school system and their feelings about their teacher preparation programs (if any); however, only a very small number of the subjects were minorities. There is also very little quantitative evaluation charted consistently over time available on programs for minority teacher candidates.

However, certain themes did emerge from the available research. One issue that constantly surfaced was the need to examine and include what teachers of color bring to teaching and learning that is qualitatively different and valuable. We also need to know more about integrating the experiences, beliefs, and cultural awareness of specific minority groups into teacher training programs. We need to know what kinds of programs seem promising in this respect.

In addition, we need to develop a more complete understanding of minorities' beliefs in, experiences with, and enactment of a culturally relevant curriculum that is also academically rigorous. What can studies tell us about the opportunity for minorities to make changes to the systems in which they find themselves? Perhaps we need to explore further Quiocho's (2000) question, "What do studies tell us about the processes that nurture minorities into and through the teaching profession in ways that help facilitate a spirit of hopefulness, joyfulness, and kindness and that encourage them to be visionaries as well as activists?" (p. 493).

Schools and programs providing teacher training need better information about which characteristics provide optimum settings for minority teacher preparation. Areas of study could include comprehensiveness and length of programs, flexibility for completing coursework, the availability of financial assistance, mentoring, and courses or programs offering multicultural perspectives.

We need to look at how minority teacher educators can guide the development of all teachers in matters of diversity, equity, and social justice; we also need to create better selection criteria for all teacher educators, since many majority-group teacher educators will be responsible for guiding minority teacher candidates.

Because we need more comprehensive teacher preparation programs to better equip all teachers to provide equitable education for all students—including those with diverse cultural and linguistic backgrounds—we need more research that addresses what course-specific or generic instructional methods are offered in teacher preparation programs for minority or majority teacher candidates who will be teaching diverse student populations.

We must also ask, How can the knowledge teacher candidates have gained in their preparation programs be transferred effectively to their eventual teaching and learning environments? This lack of transferability of skills and methods to professional settings seems to be a missing piece in teacher preparation, according to many students. What are the effects of reinforcing successful patterns of experiences within a supportive professional learning environment? Pedagogical preparation varies considerably across institutions for minority teacher candidates, as it does for mainstream candidates; we need more research that looks at specific programs or alternative pathways for minorities. This will allow us to see what is available and to make comparisons in order to create more effective preparation systems.

Future research on the preparation of minority teachers should be designed to fill several major gaps in the literature. The researchers who have been cited previously in this section have posed many challenging questions for future study. Overall, there is a need for more quantifiable research with data collected over longer time frames examining and comparing different program models or features as experienced by minority teacher candidates (including their perceptions of effectiveness).

In general, there is a need for studies looking into teacher program alternatives that include features of apparently successful practices for future replication; students could be randomly assigned to these programs (assuming they were of equal promise) in order to focus on diverse subsamples of teachers

and how these teachers fare in the programs. In addition to the topics mentioned above, new studies could focus on the impact of critical pedagogy, antiracism, and multicultural aspects in preparation programs; alternative methods of assessing minority candidates; and the relationship between minority candidates' perceptions of various pathways to teaching and the effectiveness of those pathways.

Recommendations for Further Research

Some educational practitioners say that most teachers enter the profession with little or no training in race relations and that faculties of education do not offer the courses necessary for critical training in issues of equity and social justice. There is resistance to antiracism and multicultural education innovations in this country; sometimes there is marginal support by teachers and administrative personnel because these innovations are seen as a challenge to established teaching practices and beliefs about the function of education. In addition, few educational programs equip their developing professionals with the knowledge, attitudes, and skills that American teachers from multicultural or urban settings need.

In light of these limitations, what does research tell us about the opportunity for minorities to engage in critical and essential questioning of schooling? What do the studies reviewed tell us about the personal and professional lives of minorities and what drives them toward an approach to teaching that emphasizes equity and social justice? What do the studies tell us about the possibility of minority teachers making changes in their schools systems? How can teacher education programs attend more to the needs of diverse students, especially in terms of field experience placements? How can faculty deal with the sense of alienation that can occur for preservice students who are a distinct minority in their field placements?

Another emergent issue (Jorissen, 2003, and Tellez, 1999) that may very well merit further study is the matter of having more than one student teacher placed together at a given school site. As pointed out in the teacher interviews in Jorissen's (2003) study, being in a practicum site with one or more teachers gave the candidates feelings of collegiality, allowing them to share and compare teaching strategies and skills.

Then there are the more difficult and controversial questions researchers have raised: Should teacher education programs encourage discussion on racism and diversity and be willing to take a public stand against racism? Should faculty articulate their positions and be willing to promote them? Do more frank discussions of prejudice and racism lead to positive change, or do they simply foment conflict? Traditional teacher education curriculum and pedagogy do not interrogate candidates' world views; should we urge all students to engage in critical self-reflection on their identities? How do we deal with the complexities involved in classroom application of critical pedagogy and antiracism education?

Very few teacher education faculties have explored their own racial identity issues or learned how to deal with these issues in the classroom. Also, little is known about the effects of frank and open discussions about race, gender, and sexuality. Is having a diverse teaching force in order to change the status-quo teacher demographics as important as developing a commitment to move toward a more just society? The role-model hypothesis needs to be conceptualized in terms other than demographic characteristics. What is the effect of teacher education programs having a more diverse faculty—do minority students "see themselves" among the faculty? This impact should be further explored. What effects do field placements in schools with diverse students and diverse teacher populations have on minority teacher candidates? On majority teacher candidates?

Without clear understandings of the pedagogical content and subject matter involved in teacher preparation programs, it will be impossible to replicate programs that currently seem to hold promise. Future research will need to tightly link rigorous qualitative work that documents the content of education courses with rigorous and refined quantitative measures to track program outcomes.

Finally, we thought it important for the purposes of this document to include the closing statement of the introduction from a research report prepared for the U.S. Department of Education entitled

Teacher Preparation Research: Current Knowledge, Weaknesses, Gaps, and Recommendations (Wilson, Floden, & Ferrini-Mundy, 2001):

"We conclude this introduction with an important and pressing need. As the population of U.S. school-age children becomes increasingly more diverse, our pool of potential teachers remains less so. We need to consider policies that increase the diversity of the teacher pool, and we need to prepare all teachers to reach children whose backgrounds are different than their own. Researchers have had little opportunity to investigate the implications of this shift in students and their teachers, and while a question concerning the preparation of teachers to teach diverse students was not a focal one in this review, we argue (in our recommendations for future research) that it ought to be central in the next generation of research on teacher preparation."

Question 5: What do the available data tell us about patterns of minority teacher retention? What inservice experiences support or discourage minority teachers?

This section of the report explores research related to minority teacher retention and development. In this section, we review some demographic statistics and studies that explore the patterns of minority teacher retention and mobility from one school to another, discuss studies of on-the-job experiences that discourage minority teacher retention, and explore factors that contribute to their retention. We also examine studies that explore issues related to minorities' experiences as new or continuing teachers—their induction experiences and feelings of preparedness, their retention in the profession, and the self-reflective understandings that keep many minority teachers in the profession despite unsupportive, even hostile, working environments.

For this section, we included a total of 26 studies. These include 5 literature reviews, 11 analyses of national or regional survey data, and 8 interpretive case studies. We also included one rigorous external evaluation of a research-based, comprehensive new-teacher support initiative and one analysis of a randomized, statewide research experiment that tested the hypothesis that assignment to a same-race teacher would have a positive effect on student performance.

Patterns of Teacher Retention, Mobility, and Retirement

Darling-Hammond et al. (2002) conducted a study of teachers with four or fewer years of experience in New York City Public Schools using Board of Education data files. Letters of support from the teachers' union encouraged teacher participation. On the basis of survey responses from 33% of the new teachers on file[1], the researchers estimated that more than 35% would leave the NYC schools within their first four years in the classroom. Other studies provided different statistics, but the picture is similar: Milner and

[1] An unknown proportion of these had already left the NYC Public School system

Hoy (2003) cited statistics indicating that "up to 25% of beginning teachers do not return for their third year" (p. 263), and Quartz et al. (2003) reported a three-year attrition rate of 29% on the basis of data from the National Staffing and Schooling Survey (SASS). Estimates of five-year attrition rates vary but suggest that about half of all new teachers leave the profession in their first five years (Kestner, 1994; Smith & Ingersoll, 2003). [2]

Holloway (2002) cited 2001 NCES data indicating that the proportion of minority teachers fell from 13.6% in 1987-88 to 13% in 1993-94. Mitchell et al. (2000) noted with concern that a higher proportion of minority teachers than white teachers have 20 or more years of experience, and that replacing them as they retire "is problematic given the current composition of new teacher graduates" (p. 58). Interestingly, Mitchell et al.'s review of the research and demographics of the minority teacher preparation pipeline pointed to issues related more to recruitment than retention, while Ingersoll's (2001, cited in Quartz et al., 2003) analysis of SASS data argued that "leavers" rather than retirees are contributing to teacher shortages: "School staffing problems are primarily due to excess demand resulting from a 'revolving door'—where large numbers of teachers depart their jobs for reasons other than retirement" (p. 101).

It is difficult on the basis of these data to determine with clarity the major sources of minority teacher underrepresentation. Certainly attrition of minority students in the teacher preparation pipeline is one factor, as is the isolation and lack of support that minority teachers experience when they enter the profession.

Factors Affecting Teacher Retention

Kestner (1994) and Quartz et al. (2003) summarized a number of policy analyses and research studies related to the general problem of teacher retention. The issues are numerous. Quartz et al. (2003) summarized the literature related to the profile of the "leaver." For example, math, science, and special education teachers were reported to leave at higher rates than those in other academic areas. Men were more likely to leave for other career opportunities, while women left early in their careers because of

[2] Similarly, Mitchell, Scott & Covrig (2000) cited national five-year attrition rates from various sources at 40-60%.

family-related issues. Younger teachers had a much higher turnover rate than older colleagues in mid-career, and individuals with stronger academic backgrounds and test scores tended to leave more readily than others. Low teachers' salaries and job dissatisfaction contributed to turnover, estimated by Ingersoll (2001, as cited in Quartz et al., 2003) to be an average of 13.2% per year nationally and 14.4% in urban areas. Finally, increasingly difficult and demanding standards for certification discouraged inservice teachers who got jobs with provisional certification from continuing to teach (Mitchell et al., 2000).

Research on Effective Teacher Induction

New Teachers' Induction Experiences

Kestner (1994) and Claycomb and Hawley (2000) reported on new teachers' experiences in the workplace, noting that, unlike doctors or lawyers who serve supervised internships, novice teachers are typically placed abruptly into full-time teaching positions and are too frequently given difficult teaching assignments (including the lowest performing groups or least academically talented students). In fact, new teachers are consistently placed in positions that other teachers chose to vacate (Claycomb & Hawley, 2000) and they are often given heavy course loads with limited time for preparation, little active supervision, or insufficient professional support. In addition, Lortie (1975, cited in Kestner, 1994) argued that new teachers might lack "concrete models for emulation, unclear lines of influence, multiple and controversial [evaluation] criteria, ambiguity about assessment time, and instability in the product" (p. 136).

Given the documented patterns of attrition in the teacher pipeline (Mitchell et al., 2000), induction programs are clearly essential in supporting teacher retention. Smith and Ingersoll (2003), Claycomb and Hawley (2000), and Kestner (1994) noted that induction activities include ongoing new teacher workshops, formal assignment of a mentor, formal preparation for mentors, the use of case studies and videos, journal writing, ongoing assessment, participation in team teaching situations, and providing a support team or a network of new and experienced teachers with whom to share concerns and discuss issues. All of these induction activities were intended to formalize teacher interaction and discussion about instruction—"the active engagement of faculty members in frequent, serious discussion" (Kestner, 1994, p. 43).

Claycomb and Hawley (2000) recommended designing induction programs specifically for new teachers' needs as identified by teachers and mentors; such programs would provide consistent and designated funding for induction as well as a process of meaningful new-teacher evaluation according to agreed-upon standards. Claycomb and Hawley also recommended reduced teaching loads, placing new teachers in a field in which they are qualified, and giving them less challenging assignments. Both argued for two-year induction programs rather than shorter ones.

Kestner (1994) pointed to the importance of building relationships with university faculty so that university researchers experience classroom realities and teachers gain greater familiarity with current research. Unfortunately, despite his clear concern, Kestner provided few recommendations that referred specifically to supporting minority teachers.

Effectiveness of New Teacher Induction Components

Smith and Ingersoll (2003) conducted a study of the effect of various induction supports on teacher retention (in a school or the profession) by analyzing NCES' Schools and Staffing Survey (SASS) data for 1990-1991, 1993-1994, and 1999-2000. The data indicated that the percentage of beginning teachers reporting participation in induction or mentorship programs increased from about 41% in 1990-1991 to 51% in 1993-1994. In 1999-2000, almost 79% of the responding teachers indicated that they participated in an induction program that might or might not have included assignment to a mentor. To explore the effects of particular numbers and configurations of induction program components on teachers' leaving or moving, the researchers used multinomial logistic regression analyses to calculate the probability of a beginning teacher leaving or moving to another school. The researchers tested the efficacy of varying combinations and kinds of induction services to determine those that predicted the lowest probabilities of attrition.

The numbers and configurations of additional supports, when modeled in a multinomial logistic regression analysis of 1999-2000 data, indicated that more comprehensive induction components resulted in a significantly reduced probability of new teachers leaving or moving. These more effective components included having a mentor from the same field, joint planning time with that mentor, and collaboration with other teachers about instruction. Additional services, such as an induction program, seminars for beginning

teachers, and supportive communication with administrators, reduced the probability of leaving or transferring significantly more.

The researchers looked specifically at two kinds of attrition from the perspective of a given school: the probability that a teacher would quit the profession and the probability that he or she would transfer out of one school and into another. The probability of a new teacher leaving the profession at the end of the first year was 19.9% for a teacher with no induction support and 18.4% for a new teacher receiving only a mentor and an induction seminar (47% of the teachers reported receiving these services). Receiving these services also predicted a probability of transferring out of the school at around 19%. If the new teacher had a helpful mentor in the same field, common planning time with the mentor, and collaboration with other teachers about instruction, these supports reduced the probability of leaving teaching to 11.8% and the probability of transferring to 16% (22% of the teachers reported receiving these supports).

Adding further services—including more seminars for new teachers and supportive communication with administrators—reduced the probability of leaving slightly to 11.6% but also significantly reduced the probability of transferring to 11.5%. However, only 13% of the teachers reported receiving these services in 1999-2000. Finally, only 1% of teachers reported receiving the whole package: the above services plus access to an external teacher network and a reduced number of preparations. This combination reduced the probability of leaving to 7% and the probability of transferring out to 10.5%—a dramatic decrease from those receiving the minimal package of a mentor and beginning-teacher seminar.

These data point powerfully towards the potential effectiveness of new teacher supports in reducing percentages of new teachers both leaving the profession and moving to another school. However, because these analyses were not broken out by race or ethnicity, information is lacking regarding minority teachers, who certainly share some of these experiences but may also be even more isolated in the workplace than white teachers. Therefore, some of these findings may need to be revised for minority teachers. Given this situation, case study material may be helpful to an understanding of new and minority teachers' experiences.

Effective Induction Initiatives

Claycomb and Hawley (2000) provided brief examples of state or district initiatives to support novice teachers. Perhaps the strongest example of a state-supported program is the California Mentor Teacher Program and Beginning Teacher Support and Assessment Program (BTSA), an $87-million state-funded program to recruit and retain new teachers. This research-based program was designed for one large California school district and then replicated on a statewide basis. It was particularly designed to support minority teachers in response to their systematic underrepresentation in the teacher preparation pipeline (Mitchell, Smith, & Covrig, 2000). Mitchell et al. reviewed the research on the characteristics of the teacher labor market, the occupational features of the teaching profession, and the essential roles of teachers in the classroom; they worked with school district authorities to design a comprehensive set of initiatives to recruit minorities and others into teaching and to support them for their first two years in the classroom. These supports included formal assignment to an experienced mentor, school and district workshops for new teachers, and release time to observe other teachers. Some teachers also received help with portfolio development or reduced classroom duties.

WestEd (Tushnet et al., 2003) conducted a rigorous and comprehensive evaluation and provided extensive information about the program's implementation and outcomes. The overall two-year results indicated that retention in the profession was high—an overall average of almost 93% for both first- and second-year teachers. Retention in the district was somewhat lower—a mean rate of about 87% for first-year teachers and 86% for second-year teachers. Retention at the school level was still lower but averaged 84% in the first year and 81% in the second.

Interestingly, the evaluators also found that first-year teachers in BTSA programs with districts serving large percentages of students from poor families were more likely to stay in teaching (95%) than their colleagues in more economically advantaged settings (90%) (Tushnet et al., 2003). Evaluators did not find any statistically significant differences in retention in regard to the degree of urbanization; retention rates were high in all geographic areas studied. They found that teachers' evaluations of the support they received were significantly related to first-year retention rates in the profession and the district. The research foundation, replicability of the model, and large sample sizes give credibility to the evaluation results.

Minority Teachers' Perspectives and Implications for Professional Development and Retention

We can draw recommendations regarding promising approaches to minority teacher retention from a number of reviews and interpretive case studies that take as their starting point a clear recognition of minority educators' perspectives and experiences in U.S. society.

For example, Freedman (2000) analyzed 500 grant applications submitted by 125 teachers over a 15-year period and interviewed 30 teachers from a Northeastern U.S. community. In an intensive case study of one minority teacher, she reported that the need to fundraise for special activities like a trip or for resources like a science lab or special materials tended to exacerbate class, race, and gender inequalities; teacher grant writers tended to form network groups that fostered and reinforced discriminatory practices that exist in society in general. Through informal exclusionary practices, these networks magnified the significance of differences in cultural capital between teacher subgroups. Although she was of middle-class background, the minority teacher was not seen as part of the network of other grant writers. At the same time, she found herself isolated from other minority teachers because of her engagement in this activity, which was perceived as "white" and middle class. The teacher engaged successfully in this activity but without a supportive professional network. She relied on her personal resources and persistence to succeed in an activity that marginalized many minority teachers by requiring marketing and communication skills that favored white, middle-class teachers.

Papers written by Milner and Hoy (2003) and Milner (2003) on the basis of intensive case study material described the experiences of a highly qualified African American teacher who'd been teaching for many years. Both studies clearly indicated that the teacher's professional and personal self-esteem were threatened by her isolation and lack of administrative support or professional community in many workplace settings. One of only three African Americans among 126 faculty members, she described experiencing avoidance by other teachers, isolation, and negative evaluations.

Milner and Hoy (2003) asserted that teachers' uniquely personal, pedagogical, practical, and subject-matter knowledge bases are integral to their instructional planning. The researchers provided examples of how one African American teacher's rich experiences, personal struggles, and knowledge informed her

planning and classroom practice and supported powerful and unique experiences for students, both white and minority. Milner and Hoy described how the teacher supported her sense of professional integrity by seeking a doctorate at a prestigious (and mostly white) university, by developing a strong sense of personal mission, and by building strong relationships with students and parents.

These case studies point to the need for active recognition of minority teachers' distinctive strengths and understandings as sources of their professional integrity and talents. The studies reveal the discouragement commonly encountered by minority teachers in various settings but also show that these teachers draw on positive cultural identities, personal strengths, and community ties as sources of support in their professional environments.

Promising Programs that Incorporate Understandings of Race, Ethnicity, and Critical Pedagogy to Support Minority Teacher Practice and Retention

Both Dillard (1994) and McAllister and Irvine (2002) described programs designed to help pre- or inservice teachers become more effective in their practice by gaining a clearer (and sympathetic) understanding of their own identities and those of others not like them. Dillard's preservice program was designed to prepare minority students for success in mainstream graduate school programs; preparation included a process of competency building through rigorous inquiry (critical thinking), emphasis on the role of faith and hope, and the fostering of voice and individual constructions of meaning for people of color. Encouraging students to reflect on their ethnicity and validating their personal perspectives were essential in building a foundation from which to embark on challenging graduate level work. Students accomplished this through producing an autobiography (in any medium except writing), sharing weekly journal writing, and conducting a research study that was presented to the faculty at a university-wide colloquium (Ohio State University). Students were "encouraged to use their cultural, ethnic, and academic understandings as places from which to begin their work, and to see and experience the personal power that comes from embracing one's entire person" (p. 16). As reported on page 95, the results of the program were promising.

Researchers have noted that students—particularly students of color—who have caring relationships with their teachers are more motivated than students who do not (Foster, 1995, and Gay, 2000, cited in

McAllister & Irvine, 2002). McAllister and Irvine's (2002) study explored the experiences and beliefs of 34 practicing teachers participating in a multicultural professional development course designed to foster culturally responsive practice by developing empathetic understandings of diverse students. Citing research indicating that sensitivity to different cultures is a key characteristic in being effective in urban, diverse schools (Germain, 1998; and Gordon, 1999, cited in McAllister and Irvine, 2002), the CULTURES (Center for Urban Learning/Teaching and Urban Research in Education and Schools) program emphasized developing culturally responsive pedagogy, raising cultural awareness, and adapting content to culturally diverse students. The program provided a series of sequential learning experiences that exposed the participants to various cultures represented in their communities. These activities included cooperative learning, role playing, small group exercises, simulations, community immersion trips, journal writing, lecture, discussion, and examination of research. Conclusions were based on careful coding and qualitative analysis of respondents' application data, final projects, exit interviews, and the final project report.

The results indicated that all 34 participants regarded empathy as an important factor in working with diverse students and felt that direct contact with individuals from different cultural or ethnic backgrounds was essential for nurturing empathy. Moreover, minority teachers' own experiences with discrimination helped them understand their students' experiences. The participants reported various aspects of empathetic behavior in their own classrooms, and 59% of the participants attributed changes in their interactions with students to the program. McAllister and Irvine (2002) also cited research by Foster (1995) and Irvine (1990) indicating a positive relationship between empathy and caring and high academic achievement, particularly for culturally diverse students. The authors of the study observed that the majority of teachers would probably continue to be white. Given the study results pointing to the impact of empathy on student achievement, they noted that it will be increasingly important to include activities similar to the CULTURES program in preservice and inservice teacher preparation as the proportion of diverse students continues to rise.

Finally, Quartz et al. (2003) provided a study of the process and outcomes of a program of teacher preparation at UCLA with a social justice foundation and a mission to prepare a high-quality, stable urban teacher workforce. The program, called Center X, had a resource perspective on diversity, with knowledge about culture, racism, and social justice in the center of the curriculum. Center X valued

cultural knowledge of local communities and had ties to an urban educator network, providing students with "moral, cultural, and political dimensions" (p. 102). The program explicitly used critical race theory to show the possibilities of challenging dominant discourses. The results of the program included lower attrition in teaching, and graduates of the program assumed leadership roles in schools and acted as agents of change. The authors recommended creating communities of practice that support social justice educators as a cadre of urban change agents with a high level of self-efficacy and professionalism.

Further Thoughts

This summary of research relating to minority teacher retention led the reviewers to two observations. The first is that the body of research relating to minority teacher retention is very limited, consisting of a small number of helpful studies based on national data, case studies of individual programs in context, and a body of literature that takes a critical and social-justice-oriented stance in understanding the education of minorities in the United States. Dillard (1994) asserted that "the realities for people of color in education and society are too seldom stated, discussed, or even acknowledged" (p. 9). And Kestner (1994) wrote that "researchers in new teacher induction generally do not address multicultural issues; researchers in multicultural education generally do not address new teacher induction" (p. 42). These gaps in the research suggest that existing programs for minority and non-minority teachers may operate in isolation, with the result of diminished effectiveness. This is unfortunate, because clearly the insights offered by multicultural perspectives speak directly to issues of minority teacher retention and to increasing white teachers' effectiveness with minority students.

The second observation is that, in addition to the literature that arises out of social justice theory and critical pedagogy, another promising line of inquiry is related to teacher self-efficacy (teachers' perceptions of themselves as capable of increasing student learning and doing the job well) and how that might best be nurtured and developed at both the pre- and inservice levels. For example, in a survey of new teacher retention in New York City, Darling-Hammond et al. (2002) examined the role of teacher preparation, which the researchers reported as central to the development of teacher self-efficacy. Because self-efficacy has been observed as one of the few teacher characteristics related to student achievement (Armour, 1976, cited in Milner, 2003) and persistence in teaching (Darling-Hammond et al., 2002), it is clearly important

that further research be conducted regarding the most effective ways to support the development of self-efficacy among teachers of diverse racial and cultural backgrounds.

Weaknesses in the Knowledge Base and Suggested Areas for Further Research

Teacher Attrition

It is difficult on the basis of the studies reviewed to determine the relative effects of teacher attrition through moving or leaving the profession. It is likely that decisions to enter or leave the profession result from a number of factors, including setting (urban,rural, or suburban), race or ethnicity, configuration of preservice preparation, and inservice support (including relationships with colleagues and school administrators as well as opportunities for professional growth).

Targeted and well-designed studies using large databases such as those created in California (Tushnet et al., 2003) or in large metropolitan areas might permit the incorporation of additional individual characteristics, workplace characteristics, and professional development components that would strengthen our understanding of the factors that support minority teacher retention and explain mobility.

Supporting New Teacher Retention

It is clear from work by Smith and Ingersoll (2003) that increased induction experiences support new-teacher retention. However, we do not know which components in which combinations might be most effective for which types of minority teachers. Planned variation case studies within specific contexts and teacher populations might help to identify the differential effectiveness of particular supports for individuals of varied racial and ethnic backgrounds.

The Role of Minority-Serving Institutions (MSIs)

This review did not systematically examine the possible effects on minority teacher retention of school-university collaborations, particularly the potential role of minority-serving institutions (MSIs). In retrospect it is a shortcoming and should be included in future research reviews. Although descriptions of programs in MSIs exist, we have little information about the possible effects of attending an MSI (or

a particular type of program within an MSI) on teacher retention. Future reviews should explore the existence of research on the long-term retention of minority teachers prepared in MSIs, and future research might explore what kinds of ongoing relationships between a school or district and an MSI would increase minority teacher retention in the profession.

Creating Multi-Cultural Experiences

Detailed, descriptive studies of promising programs to prepare minority teachers suggest that a process of self-reflection and strategically designed multicultural experiences might increase minority teacher retention as well as help non-minority teachers gain a better understanding of both their own and other cultures. To build theory and increase an understanding of how individuals' views of themselves and others develop through action and reflection, various designs for structuring these reflective and multicultural experiences could be implemented and documented in case studies at the pre- or inservice level. University settings or school-based inquiry groups would provide possible venues. Well-designed small-scale programs centered on specific cultural or ethnic groups would provide important evidence for wider and more systematic implementation. The work described by Quartz et al. (2003) and McAllister and Irvine (2002) provides helpful examples of possible program models.

Mentoring

While the research suggests that having a same-field mentor is helpful (Smith & Ingersoll, 2003), we still do not know enough about what mentor characteristics are most effective, nor do we know about the most effective duration, intensity, or structure of mentoring relationships. Case studies designed to examine mentor and mentee characteristics and behaviors would help to build a knowledge base that could be replicated systematically in varied settings.

Developing Teachers' Self-Efficacy

Teachers' professional self-efficacy appears to be an essential component of both teacher effectiveness and retention in the profession (Milner, 2003; Darling-Hammond et al., 2002). There is still a need to explore how self-efficacy is best developed in teachers of diverse backgrounds. It is likely that self-efficacy might be developed through a variety of professional preparation or growth opportunities (both pre- and inservice), but there is still relatively little systematic exploration of their characteristics. However, models

may be drawn from rich program descriptions (which include outcome data, where possible), including the Center X program (Quartz et al., 2003) and the program designed and described by Dillard (1994).

Because self-efficacy is developed through a variety of experiences, this question can be researched through a number of means: systematic evaluation of teacher preparation coursework, mentoring, or field experiences and design studies of the components of teacher induction. However, any interventions or evaluations must be designed to identify differences in how diverse participants engage in, benefit from, or respond to the process and content of the experiences offered.

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Part IV: Appendix A – Insights from Economic and Business Literature

In September 2003, a group of major United States corporations took out a special advertising supplement in *The New York Times* to make a case for "why creating a culture of inclusion that celebrates and leverages diverse perspectives … is a central objective of the country's most forward-thinking organizations."[1] Because we identified relatively little rigorous research regarding minorities' experiences with discrimination in educational settings, we sought potentially *applicable* research findings from economics and business literature. Many major corporations have demonstrated an understanding of the contributions of diversity to innovation and problem solving (Milem, in press). With this understanding, one early strand of our inquiry focused on the economics and business literature related to the representation and experiences of minorities in the workplace.

Job and Workplace Segmentation

Job segregation and high concentrations of certain minority groups in certain professions is supported by a large body of rigorous research related to racial representation, segmentation, and compensation within the labor force at the national level. Based on national census data and other large public databases, analyses reveal persistent job segregation and wage inequality for minorities (Browne, Hewitt, Tigges, & Green, 2001; Elman & O'Rand, 2002; Stoltzenberg & Tienda) as well as exclusion of minorities from management (Smith, 2002). Elman and O'Rand (2002) also note that conditions of inequality in the workplace lead to increased insecurity and longer periods of unemployment between jobs for minorities.

Workplace Composition

Researchers have examined the effect of workforce composition on workers from numerical minority and majority groups. Reskin, McBrier and Kmec (1999) reviewed over 100 studies related to the determinants and consequences of workplace gender and race composition. The studies examined the composition of the qualified labor supply, the role of employers' preferences (including required qualifications), and the response of majority groups in the workplace to the presence of minorities. The race and gender composition of an establishment was found to affect workers' cross-group relationships, stress, satisfaction, and retention (all of which are observable in education settings).

[1] Diversity Works (2003, September 14). Special advertising supplement to *The New York Times Magazine*.

Exclusion of Minorities Through Networks

Reskin, McBrier and Kmec (1999) also reported that more attractive organizations "protected" jobs and excluded minorities. Reskin et al. (1999), Milem (in press), and Smith (2002) reported the tendency for employers at various levels of organizations to create enclaves of employees of similar backgrounds, reducing diversity and producing conditions of ethnic and racial isolation. Smith also reported that the "tendency on the part of authority elites to reproduce themselves through both exclusionary and inclusionary processes" (p. 509) was the strongest explanation for the patterns of underrepresentation of minorities in management. Recruitment through informal networks was found to reproduce an establishment's composition and discourage diversity. This suggests that using existing networks to recruit minorities into education is unlikely to be successful in increasing the representation of minorities in education (Mitchell, Scott, & Covrig, 2000).

Workplace Relationships

Smith (2002) found that greater exposure to minorities in the workplace was not sufficient to ensure positive contacts between groups. Moreover, racial tokenism (rather than a policy of genuine commitment to encouraging diversity) was associated with minority employees' experiencing performance pressure, stress, and isolation. In addition, many forms of pro-forma diversity (implemented without a coherent plan for supporting and valuing diversity at the institutional and policy level) result in minority isolation, or tokenism, and failure (Reskin et al., 1999; Milem, in press). Smith (2002) also noted that active support by leadership was needed to build positive relationships between individuals of different racial and ethnic groups. This work clearly implied that planning and support for diversity had to be not only comprehensive and systematic but also supported from the top of an organization.

On a more hopeful note, research on the national level also provided evidence that Equal Employment Opportunity enforcement and affirmative action orders in large organizations tended to diminish the patterns of inequality that some research has attributed largely to discrimination (Reskin et al., 1999, and Smith, 2002).

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Browne, Hewitt, Tigges, and Green, 2001 Why Does Job Segregation Lead to Wage Inequality Among African Americans?	Testing four hypotheses of race discrimination at varied levels using household survey data from the Atlanta sample of the Multi-City Study of Urban Inequality (which used a multistage, stratified area-probability design of the nine-county Atlanta metropolitan area). N: 1,529 areas Analyses: descriptive statistics, multivariate analysis (multiple regressions) to test the four models Variables: DV: hourly earnings for workers employed full time and full year. IVs: employment in a majority-black job; race or ethnicity of most of the employees doing the same kind of work in the same location; educational attainment (3 dummy variables for high school dropout, high school graduate, or attended school beyond high school); the percentage of African Americans living in the tract where the establishment is located; and dummy variables indicating central city residence and central city employment. Dummy variables were included for industrial sector and public sector employment as well as industry type. Variables for firm size and presence of a union contract were also included. Finally, the reported jobs were classified according to the Dictionary of Occupational Titles and added to the individual records in an attempt to measure occupational and job characteristics associated with working at low-skill positions. Gender was also included as a control for sex segregation of jobs.	The research explored the general mechanisms of sorting minorities. Pay differentials exist but are subtle. Why are African Americans who are employed in predominantly black jobs paid lower wages compared to African Americans in predominantly white jobs? Four hypotheses were tested using four independent variables predicting wage inequality: (1) the characteristics of individuals; (2) characteristics of the neighborhood where jobs are located; (3) the position of industries and firms within a segmented economy; and (4) the skill requirements of jobs. African Americans working in full-time jobs where the majority of their co-workers are also African American earned $3,470 less annually than African Americans employed in predominantly white jobs. The wage gap was not due to residential segregation. Instead, it appeared to be driven by the skill requirements of the jobs themselves, which are disproportionately service-industry jobs and occupations that require few skills.

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Elman and O'Rand, 2002 Perceived Job Insecurity and Entry into Work-Related Education and Training Among Adults	Analysis of national survey data. The researchers attached data from the 1995 Adult Education Data File to Bureau of Labor Statistics data on layoffs and part-time employment to see under which structural conditions adults aged 35-61 would see their jobs as insecure. They also conducted a sample of computer-assisted interviews. Variables: Logistic regression analyses were used to compute the probability of various predictors resulting in respondents' decision to engage in work-related education. IVs: (1) completed education (initial education); (2) job tenure (the length of employment in the current job) and job benefits (e.g., sick leave with pay, pension, vacation with pay, medical insurance); (3) facilitation of job training; (4) union membership; (5) earnings (logged); (6) having more than one employer in the previous year; (7) ongoing education certification; (8) age; (9) race or ethnicity; (10) gender; (11) marital roles; and (12) family roles (caring for children or elderly relatives). Finally, the researchers also attached published occupational contingent employment rates and industrial displacement rates to the Adult Education Survey (to control for unstable market sectors). Control variables included region of the country and city size.	The authors tested a series of research-based hypotheses to explore the conditions under which adults of different educational and occupational backgrounds sought additional education or training. Overall, 14% felt they were likely or very likely to be laid off or lose their jobs in the following 12 months. About 9% were engaged in work-related educational activities. Results indicated that adult participation in work-related education reflected perceived job insecurity and industrial restructuring rather than prior education or "competing life course roles" (p. 49).

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Milem, in press The Educational Benefits of Diversity: Evidence from Multiple Sectors (Unpublished book chapter)	Multidisciplinary analysis of literature summarizing the research evidence related to the benefits of diversity from critical race theory, economics, education, feminist studies, health policy, law, medicine, organizational behavior, organizational effectiveness, psychology, social psychology, and sociology.	Benefits of diversity accrued to individuals, institutions, and society. For example, in higher education, diversity enhanced student growth and development in the cognitive, affective, and interpersonal domains. Diverse ideas and information have entered the academy largely due to the presence and efforts of diverse people. A very small sampling of relevant findings follows. Milem cited Pascarella et al. (1996), who reported evidence that participation in racial and cultural awareness workshops led to measurable gains in critical thinking for students at the end of their first year of college. Gurin (1999) was cited as providing evidence that higher levels of contact with diverse ideas and information and diverse people were more likely to produce growth in people's "active thinking processes," which were represented by increases in measures of complex thinking and social or historical thinking (p. 7). Students who interacted more with diversity in college exhibited more liberal racial attitudes four and nine years after entering college. At the institutional level, Braddock and McPartland (1989) were cited as showing that early school desegregation and community desegregation patterns tended to promote adult desegregation in work environments. Milem asserted that research from the private sector provides compelling evidence about the ways in which diversity enhances organizational effectiveness.

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Mitchell, Scott, and Covrig, 2000 Cultural Diversity and the Teacher Labor Market: A Literature Review	This report is a systematic review of the teacher labor market and the occupational characteristics of the teaching profession with the intention of developing systematic strategies for increasing the diversity of the teaching workforce in California. Using labor market segmentation theory as a framework, the investigators observed how individuals with various demographic and social characteristics had very different experiences when they entered the education labor market, particularly when these individuals were not representative of the total workforce or the student population being served. Mitchell et al. explored the task structure of teachers' work and the organizational structure of schools.	There is a wide disparity between the ethnic and racial characteristics of California's student population (increasingly minority) and the teaching force (overwhelmingly white). Analysis of the demographics of the teacher preparation pipeline point to minority attrition at every step in the process, from high school graduation to entry into teaching as well as retention once in the classroom. The researchers concluded that persistent tensions among the cultural and personal backgrounds of teachers, the task structures required for excellence in teaching, and the occupational structures required of complex public institutional life limit both the quality and diversity of the teaching workforce. Policy and program recommendations were provided for ways to encourage cultural diversity within the teaching workforce while at the same time enhancing teachers' professional competence and strengthening school organizations. Authors' note: The statewide evaluation of the resulting Beginning Teacher Support and Assessment program can be found in Tushnet et al.'s (2002) evaluation.

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Reskin, McBrier, and Kmec, 1999 The Determinants and Consequences of Workplace Sex and Race Composition	This review explores the determinants of the gender and race composition of organizations and their consequences for organizations and workers.	"As a whole, U.S. work organizations are far from homogeneous with respect to sex and race composition" (p. 2). School segregation and tracking by race and gender have produced race and gender differences in educational attainment, and "hiring discrimination and occupational segregation have generated differences in experience and skills" (p. 2). Large and growing organizations can accommodate heterogeneity without denying employment to majority-group members or forcing them to work with groups they would prefer to avoid. On the other hand, the more attractive an organization, the greater the incumbents' incentive to exclude outsiders, and its attractiveness to majority groups increases. Executive orders and formalized recruiting policies do prompt modest gains in the representation of African Americans and women (p. 4). Government employers are thought to be more receptive to women and minorities than the private sector, but this may be more the case for minorities than women. Recruitment through informal networks tends to reproduce an establishment's demographic composition. Demography is an important structural property of organizations because it conditions interactions and group processes, which in turn can affect workers' attitudes and job performance. Larger proportions of minority groups may be seen as threatening by co-workers. However, greater exposure to diverse individuals in the workplace is not sufficient for positive contacts, and women in the minority in their mixed-gender work groups reportedly felt more isolated than either women who were in the majority or men in general. Racial tokenism was also associated with experiencing performance pressure; however, in general, the greater a minority group's representation, the less distorted evaluations tended to be. Studies of the effect of racial and ethnic composition in the workplace are complex and contradictory. "Overall, the majority of the research suggests that the representation of women and minorities in establishments is negatively related to their own earnings and sometimes those of men" (p. 8).

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Smith, 2002 Race, Gender, and Authority in the Workplace: Theory and Research	Comprehensive review of research literature	Analysis indicated that race and gender remain "important impediments" to the attainment of authority positions in organizations. This finding was consistent and robust across state, national, cross-national, and cross-temporal studies, even when individuals' human capital investments (education and other preparation) and structural location were controlled for. The author concluded that the "most promising explanations for persistent racial and gender disparities in authority concern the racial and gender demography of the workplace, and the tendency on the part of authority elites to reproduce themselves through both exclusionary and inclusionary processes" (p. 509). Gender and racial equality in the workplace "appear to be more pronounced in large organizations, in the public sector, in newer rather than older organizations, in organizations subject to periodic review, during periods of EEO enforcement, and in organizations that have formalized personnel policy" (p. 520). When examined for patterns of job authority for racial and ethnic groups beyond African Americans and whites, the data revealed a hierarchy with white and Asians on top and with African Americans on the bottom. Moreover, "the racial gap in authority and in the amount of income returns to authority has either increased (citing Wilson, 1997b) or remained constant over time (Smith, 1997, 1999)" (p. 509).

Reference Sources for Appendix A

Study	Research Tradition Sample Size Variables	Findings
Stoltzenberg and Tienda, 1999 English Proficiency, Education, and the Conditional Economic Assimilation of Hispanic and Asian Origin Men	This research tested two hypotheses: (1) that educational attainment and English fluency jointly determine the earnings of some minority groups but not others (English fluency interacts with educational attainment in affecting earnings of language minorities); and (2) that employment discrimination gives minority workers lower rates of return to schooling than their non-minority counterparts. The researchers also anticipated that the interactions would work differently for racial minorities than for ethnic minorities. Separate analyses modeled earnings (the dependent variable) for white Hispanic men, white non-Hispanic men, and Asian men. IVs included English language fluency, years of schooling completed, and measures of other characteristics including geographic location, hours of work, foreign birth, years of labor market experience, and self-employment. These were used to calculate rates of return to schooling, effects of English language fluency, and standardized levels of expected earnings for each of these three groups at high and low values of human capital variables, while holding constant hours of work, geographic location, and other relevant variables. Dummy variables were created for foreign birth, period of immigration, self-employment status, and geographic location. Data sources: the 1980 U.S. Census of Population Public Use Microdata Sample (PUMS) state samples. After selecting only the targeted populations, the resulting dataset consisted of 74,726 white Hispanics, 140,369 white non-Hispanics, and 17,900 Asians. Weights for white non-Hispanics were adjusted to reflect sampling probabilities; data for Hispanics and Asians were self-weighting.	The analyses suggested that conditional assimilation exists and produces two apparently inconsistent results: (1) for minority and non-minority individuals who are fluent in English and well educated, employment outcomes are roughly equal; (2) for minority and non-minority individuals who speak little or no English and have little schooling, employment outcomes (income) are much better for non-minorities than for educational and linguistically similar non-minorities. The researchers concluded from the data that English non-fluency serves as a marker that triggers or exacerbates discrimination against white language minorities. The findings suggested that patterns of conditional assimilation reward a relatively small proportion of ethnic minority members who are both fluent in English and highly educated while penalizing the great majority of minority group members who are neither English-fluent nor highly educated. The researchers suggested that these findings have practical implications for statistical tests of employment discrimination, including tests currently used in courts of law in the United States.

Introduction		
Study	**Research Tradition Sample Size Variables**	**Findings**
American Association of Colleges for Teacher Education (AACTE) (1999) Teacher Education Pipeline IV: Schools, Colleges, and Department of Education Enrollments by Race, Ethnicity, and Gender	Stratified random sample. Survey of AACTE member institutions. This is the fourth paper in a series spanning a decade of study. It provides regional summaries and graduate enrollment summaries. 23 of 34 member institutions responded; 712 undergraduate transcripts were reviewed Variables: race or ethnicity, age, high school and college GPA; college course grades, program completion, dropout or stopout; type of college attended. Individual was unit of analysis. Analyses: descriptive analyses: cross tabulations and correlations; ANOVAs and multiple regression analyses to predict graduation.	All students admitted to a given institution were admitted using the same policy and standards. Although entering minority students had lower GPAs and SAT admission scores, the gap narrowed as students progressed through college. The high school GPA was a better predictor of success in college than the SAT score. Mean college GPAs increased throughout college for all ethnic groups—whites, African Americans, and Hispanics. Mandated testing may discourage prospective college students from considering teaching as a profession. Attrition rate was higher for African Americans than whites or Hispanics. The majority of minorities are transfers from community colleges. The highest graduation rates were observed in large research universities.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Burton, 1993 Management, 'Race,' and Gender: An Unlikely Alliance?	Life history approach. 45 case studies of senior managers in educational institutions in England, Canada, and the U.S. Sample included 10 black women, 9 black men (of Afro-Caribbean or Asian origin) and 20 white women. Objective: Identify effective equal opportunities strategies from commercial and industrial sectors in the U.K. and North American educational institutions.	Interview data pointed to the importance of significant people in their development—role models, parents, or educators. On-the-job mentoring was a central issue as well, both individually and in groups. Many felt the responsibility to mentor others coming behind them. Non-white respondents reported feeling responsibility for serving the community as well. Non-whites expressed feelings of isolation and the need to prove their worth by excelling in their work. Racism (interpersonal and institutional) overwhelmed all other issues reported. Participants reported that management strategies included being available, being team oriented, listening and negotiating, less demarcation between the personal and professional, and presenting a positive role model. Responses suggested that only a whole-institutional focus can make a difference in the promotion and retention of women and minorities. Recommendations for institutional action include (1) supporting conversations about equal opportunities, (2) providing role models in senior positions, (3) monitoring the results of mentoring, (4) creating representative review panels and setting out job criteria in advance, and (5) creating close links with the community regarding institutional obstacles that remain. Other institutional recommendations included (1) providing work and study opportunities to clarify career direction options, (2) developing a formal mentoring policy, and (3) considering flat rather than pyramid structures to create opportunities.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Burtonwood, 1990 INSET and Education for Multicultural Society: A Review of the Literature	Policy review. History and outcomes of the 1987 implementation of multicultural, antiracist education for all teachers in Britain.	Britain developed a national curriculum to acknowledge ethnic diversity. Features of the plan included a school focus, active learning for adults, action planning, and "democratic cultural pluralism to be embedded in pedagogy" (p. 5). Facilitators (inside and outside) were trained to use action research as a focus for work in schools—school-wide collaborative inquiry and action to support innovation. Approaches included a psychological emphasis (changing attitudes); others wanted organizational development to plan for change. Implementation had to be modified towards gradualist approaches for white areas (beginning with teachers' own agendas and then moving towards antiracist perspectives), employing both multicultural and antiracist approaches. "Ideas must be presented in such a way that they fall within the latitude of acceptance of teachers, and this will mean acceptance of cultural pluralism as a staging post in proceeding towards anti-racism" (p. 6). Special training for teachers was required because the system did not equip teachers to do this. Among the required skills for trainers was "management of change as well as content" (p. 6). Education for a multicultural society has a cross-curricular dimension. Whole-school approaches within a framework of teacher-identified needs are needed, as well as collaborative teaching and active teacher participation.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Carranza & Gouveia, 2002 The Integration of the Hispanic/Latino Immigrant Workforce	Policy-oriented investigation entailing (1) a review of census data, media archives, and published research on the integration of immigrant newcomers; (2) a survey questionnaire mailed to "a wide array of agencies and organizations … charged with integrating newcomer populations" in Nebraska; and (3) "focus groups with newcomers and key organizations in three Nebraska communities" (p. 1).	Population increases in Great Plains states have largely been due to Hispanic immigration, which has resulted from the restructuring and revitalization of industries such as meat and poultry processing. Review of census data indicated the following: The Hispanic population in Nebraska increased at least 155% between 1990 and 2000, while the Hispanic school-age population increased by almost 300%. The greatest increase was noted in mid-sized communities of non-metropolitan counties. Newcomers are concentrated in the "bottommost jobs" (p. 10), but newcomers see self-employment as their best chance at prosperity. There is little institutional effort to support this entrepreneurial drive. Policies often promote exclusion and isolation of immigrants rather than integration. Dropout rates for Hispanic high school students "far exceed" the state's average (p. 10). While there is evidence of "abundant social capital and family solidarity within the immigrant community," there may not be sufficient social capital to negate the effects of "exclusionary immigration policies, segregation, racism, and institutional barriers to academic achievement" (p. 11). Review of the census data suggests that an exodus of Hispanic immigrants could "devastate rural communities" (p. 13). Providing supports for reservoirs of social and human capital in the older immigrant and newcomer communities is critical. *findings continued on next page*

Introduction		
Study	**Research Tradition Sample Size Variables**	**Findings**
		The survey of service-provider and other organizations indicated some major challenges to integration: language, cultural conflicts and racism, and lack of assimilation and understanding the law. Needs for housing, education and training, health services and transportation, and access to legal advice were all cited as barriers to the successful integration of the immigrants. Focus group results reinforced the perceptions of poor work conditions, poverty, and precarious employment and legal status as major obstacles to integration. The findings supported the view that integration of immigrants is a "two-way process whereby its trajectory and outcomes are largely shaped by the extent to which immigrants and newcomers experience a welcoming or hostile environment…" (p. 32-33).

Introduction

Study	Research Tradition Sample Size Variables	Findings
Dee, 2001 Teachers' Race and Student Achievement in a Randomized Experiment	Randomized experiment designed to determine the effect of class size (teacher/student ratios) on student achievement in schools across Tennessee (Project STAR Public Access Data). The resulting data were used in a secondary analysis to examine the effect on student performance by student assignment to a same-race teacher. Small sample sizes for Hispanics and Asians permitted analysis only for black and white students. Variables: For students—assignment to one of three class conditions: a small class (N=15), a regular-size class (N=22), and a regular class with an aide. Also a school identifier, race (black, white), grade, gender, age, free lunch eligibility status. For teachers—race, years of experience, education (degrees), and merit pay status. In addition, variables were created for the percentage of a student's classmates who were black, the percent female, and the percent who had attended kindergarten. Time period: 1985-1990 The kindergarten population was selected to minimize the possible effects of parent demands for assignment to another classroom. Analysis: Auxiliary regressions to seek and control for confounds in the data, including student attrition and classroom reassignments; OLS and 2SLS regressions to explore various models explaining the effects of assignment to an own-race teacher on students' SAT scaled scores in reading and math. Ns: 23,883 observations in math and 23,544 observations in reading over four years.	Statistical analysis indicated that randomization was effective. Models of student achievement indicated that a 1-year assignment to an own-race teacher significantly increased the math and reading achievement of both black and white students by 3-4 percentage points. These results were stronger for lower-income black students in segregated settings and particularly with inexperienced teachers. The data suggested that these results were cumulative. On the other hand, these differences were not significant in the small classes (15 students or fewer). Black students were substantially less likely to have an own-race teacher. "Provocative hints that these racial interactions involve complex structural effects which interact in important ways with other student, teacher, classroom, and school traits" (p. 23).

Introduction

Study	Research Tradition Sample Size Variables	Findings
Dillard, 1994 Beyond Supply and Demand: Critical Pedagogy, Ethnicity, and Empowerment in Recruiting Teachers of Color	Personal narrative and program description with outcome data 21 undergraduate students of color interested in careers in education and graduate study participated in an eight-week summer research institute (Opening Doors) with explicitly stated objectives in the summer of 1992. The program included identification of talented undergraduate minority students with potential for success in graduate study in education; provision of an interactive environment for students to grow in their understanding of self; and increased student understanding and knowledge of graduate study in education.	A year later, 11 of the 21 students were enrolled or in process of enrolling in graduate study in fields of education (K-12 and higher education). Three were teaching in public schools, two of them in bilingual programs. Four of the remaining seven were in their senior year of undergraduate study; two were employed at Ohio State University as the African American and Native American student recruiters; and one was teaching in Colombia, South America.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Ingersoll, 1999 The Problem of Underqualified Teachers in American Secondary Schools	Analysis of the nationally representative 1993-1994 NCES Schools and Staffing Survey. Data included linked questionnaires for each school sampled from the principal, central district administration, and a sample of teachers. Sample sizes averaged around 5,000 school districts, 11,000 schools, and 55,000 teachers. The analysis compared teachers' reports of their pedagogical training and certification with their course schedules, collected from the schools. Given the controversy around using certification or course credits as defining a "qualified teacher", the study used the most compelling case—teachers who are teaching core academic subjects without even minimal credentials in their teaching field.	"Subject knowledge and teaching skills are important predictors of both teaching quality and student learning" (p. 36). About a third of all secondary school math teachers (grades 7-12) did not have either a major or minor in math, math education, related disciplines such as physics, or engineering. About a quarter of all secondary school English teachers lacked a major or minor in English or related subjects, such as literature or communications. About a fifth of secondary science and social studies teachers lacked appropriate or related training in their areas of teaching. The proportion of public school teachers without appropriate preparation (as defined above) was consistently higher in high-poverty schools than in low-poverty schools. The proportion of public school subject-area teachers without certification in that field was higher in high schools serving grades 9-12 than in secondary schools (7-12) as a whole. On the basis of this and other research, the author points to the many negative consequences of out-of-field teaching—over-reliance on short-answer, standardized tests and textbooks that do not encourage critical thinking. In addition, the need for teachers to prepare to teach subject areas for which they have little training may draw time away from other courses that they teach. The data suggested that students in high-track courses were considerably more likely to be taught by teachers without a major in that field, particularly in the physical and life sciences, as well as history. *findings continued on next page*

Introduction		
Study	**Research Tradition Sample Size Variables**	**Findings**
		Younger students in grades 7 and 8 were more likely than older students to be taught by teachers without a major in their field. The author rejected the hypothesis that poor or incomplete college or university training programs produce these patterns. Using mathematics as an example, the data suggested that only 1% of U.S. teachers do not have bachelor's degrees, whereas an additional 32% have an out-of-field (non-math) academic or education major. He also challenged the argument that union work rules have heavily contributed to the problem. The data indicated that beginning teachers are more prone than others to be misassigned, regardless of school type or the presence of unions. Finally, teacher shortages, particularly in some areas, may result in some misassignments but do not fully explain the problem. Ingersoll posited a more fundamental problem in the teaching occupation, drawn from the sociology of organizations and occupations as well as his own former teaching experience. He posited that the continued treatment and status of teaching as a "semi-profession" is largely responsible for practices that result in teacher misassignment: rather than seek a qualified alternative, administrators assigned teachers as if they were semi-skilled and interchangeable workers. Possible actions to remedy the situations would be to (1) offer incentives or provide free retraining to attract and retain teachers and (2) assign new teachers to within-field classes. Ultimately, he argued that the solution lies in upgrading the quality of the teaching job itself by improving working conditions.

Introduction		
Study	**Research Tradition Sample Size Variables**	**Findings**
McAllister and Irvine (2002) The Role of Empathy in Teaching Culturally Diverse Students: A Qualitative Study of Teachers' Beliefs.	Interpretive case study of practicing teachers' beliefs regarding the role of empathy as an attribute of effectiveness with culturally diverse students. N = 34	Positive findings emerged from content analysis of over 125 documents generated by Project CULTURES, a multicultural, interactive professional development seminar designed to help foster culturally responsive practice. Teachers reported more positive interactions with culturally diverse students, more supportive classroom climates, and more student-centered practices. The experiences perceived as most valuable in changing teachers' practice for the better included a cross-cultural simulation, cultural immersion trips, and their own experiences as minorities.
Milem, J.F. (In press) The Educational Benefits of Diversity: Evidence from Multiple Sectors. (Chapter 5 in a pre-publication draft) In Witt, D., Jones, J. and Hakuta, K., Eds. (in press) *Compelling Interest: Examining the Evidence on Racial Dynamics in Higher Education*.	Comprehensive and extensive multidisciplinary review of the literature about the benefits of diversity from higher education, economics, health policy, law, medicine, organizational behavior, organizational effectiveness, psychology, social psychology, and sociology.	At the individual level, the research indicated that diversity enhances student growth and development in the cognitive, affective, and interpersonal domains. The benefits of diversity have been extensively researched in education and a large number of fields, and a large number of rigorous studies document benefits at the individual, institutional, and societal level. Structural diversity is necessary for diverse interactions to occur. Research in education reported that increasing emphasis on diversity in college courses increased racial understanding, sense of community, and satisfaction with college. Learning outcomes for students were also enhanced, including active thinking processes and higher levels of engagement. At the institutional level, students in institutions that encouraged interactions with diverse students expressed more satisfaction with their college experiences, and recent research has suggested that they may also enjoy greater material benefits from attending these institutions. This chapter provides extensive reporting of rigorous research that describes additional benefits for education and other fields as well.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Mitchell, Scott, & Covrig, 2000 Cultural Diversity and the Teacher Labor Market: A Literature Review	This report is a systematic review of the teacher labor market and the occupational characteristics of the teaching profession with the intention of developing systematic strategies for increasing the diversity of the teaching workforce in California. Using labor market segmentation theory as a framework, the investigators observed how individuals with various demographic and social characteristics have very different experiences when they enter the education labor market, particularly when these individuals are not representative of the total workforce or the student population being served. Mitchell et al. explored the task structure of teachers' work and the organizational structure of schools.	There is a wide disparity between the ethnic and racial characteristics of California's student population (increasingly minority) and the teaching force (overwhelmingly white). Analysis of the demographics of the teacher preparation pipeline pointed to minority attrition at every step in the process, from high school graduation to entry into teaching as well as retention once in the classroom. The researchers concluded that persistent tensions among the cultural and personal backgrounds of teachers, the task structures required for excellence in teaching, and the occupational structures required of complex public institutional life limit both the quality and diversity of the teaching workforce. Policy and program recommendations were provided for ways to encourage cultural diversity within the teaching workforce while at the same time enhancing teachers' professional competence and strengthening school organizations. Author's note: The statewide evaluation of the resulting Beginning Teacher Support and Assessment Program may be seen in Tushnet et al.'s (2002) evaluation.
Siraj-Blatchford, 1991 A Study of Black Students' Perceptions of Racism in Initial Teacher Education	Open-ended interviews with four black students to determine main areas to be studied. Small-scale survey then prepared, to which 68 students responded. Students' perceptions of racism included all the interpersonal, institutional, structural, and cultural practices that black students identified as such. Analysis was restricted to experiences that took place in institutional context (racial intimidation and attacks that occurred outside of context were thus excluded).	Findings suggest that factors as varying as accommodation, courses, and school placements influence the perceptions of students. Black students' experiences need to be as positive as those of their white peers. Institutions and departments within which these students are educated have direct responsibility to set up adequate procedures to deal with racism at all levels.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Smith and Ingersoll, (2003) Reducing Teacher Turnover: What Are the Components of Effective Induction?	National randomized survey that explored the relationship between the components of teacher induction and retention. Data sources: NCES's Schools and Staffing Survey (1999-2000) and the Teacher Follow-Up Survey (2000-2001). The study focused on 3,235 first-year teachers out of the 52,000 in the SASS data. Descriptive analysis focused on the incidence of induction, mentoring, and turnover for varying teacher characteristics and school settings. Stage 2 analyses used multinomial logit regression to predict the probability of new teachers' leaving based on configurations of induction supports that they had received. Variables: School characteristics (components of induction programs, school size, urban or rural; private, public, or charter; elementary, middle, or high school, K-12, etc. Teacher characteristics: race, gender, ethnicity; induction services reported; status in terms of staying in the same school, moving to another, or leaving teaching.	Overall analyses indicated that the proportion of new teachers reporting involvement in a formal induction program increased from 4/10 in 1990-1991 to 6/10 in 1999-2000. Teachers in public schools were more likely to report receiving some form of induction support than teachers in private or charter schools. Small, rural schools and charter schools were less likely to report providing such supports. The most commonly reported induction supports reported in public schools were mentoring (70.4%), an induction program (66.9%) or seminar (68.1%), or "supportive communication" from a supervisor (80.6%). Only 29.8% reported having an aide. Charter schools were more likely to support collaboration (61.2%), supportive communication (80.4%), or an aide (40.3%). Over 29% of the participating first-year teachers moved at the end of their first year or left teaching (15%). The highest rates of leavers were reported from charter schools (24%), particularly urban ones (30%). The rate of leavers was lower in the private schools (26%) but higher in non-Catholic religious schools (36%) and rural schools (42%). Results of the regression analyses indicated that configurations of induction supports had a considerable effect on patterns of teacher retention, mobility, or dropout. The probability of leaving for teachers reporting no support was approximately 19.9%, and 18.4% for teachers reporting a mentor and an induction seminar. *findings continued on next page*

Introduction		
Study	**Research Tradition Sample Size Variables**	**Findings**
		With a helpful mentor in the same field, common planning time with the mentor, and collaboration with other teachers concerning instruction, the probability of leaving decreased to 11.8% and the probability of transfer to 16%. Adding other services, including an induction program, seminars for new teachers, and supportive communication with administrators reduced the probability of leaving to 11.6% and the probability of moving significantly to 11.5%. Only 13% of teachers reported receiving these services. Only 1% reported receiving the whole package of supportive services—all of the above plus access to an external teacher network and a reduced number of preparations. This combination reduced the probability of leaving to 7% and the probability of transferring to 10.5%.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Solomon, R. P., and Rezai-Rashti, G., 2001 A Study of Black Students' Perceptions of Racism in Initial Teacher Education. Literature Review and Interpretive Study	One-year study included pre-program baseline information using various profiles and surveys, interviews, practicum classroom observations and follow-up interviews as well as post-program evaluations and data analysis. Subjects were 36 post-baccalaureate preservice teachers, including white Canadian, Guyanese, West Indian, Asian (Indian and Pakistani), and Egyptian students (to ensure equitable representation across racial population of Ontario) at one of York University's off-campus sites. This research examined the study of race, racism, and antiracism pedagogy in mainstream preservice teacher education scholarship, and looked at how such a program prepares graduating teachers to implement antiracism education into their everyday classroom practice. The research was designed to identify and interrogate teacher candidates' stage of racial identity development in terms of attitudes, knowledge, and behaviors toward racialized minorities in schools and Canadian society at large; establish linkages between a teacher's racial identity and the educational and life opportunities of minorities; and recommend a teacher education pedagogy—including curriculum content and methodological approaches—that would help teacher candidates grow personally and professionally to a higher level of competency and commitment to teach culturally diverse students.	Findings included a definition of concept of "dysconscious racism"—that is, that teachers unconsciously implement institutional policies and practices that legitimize assumptions and stereotypes about racialized minorities (which is perpetuated in educational settings by attitudes and behaviors of people in positions of authority such as teachers and administrators.) The study also included recommendations for better screening processes for those entering teacher education and for field-based support staff in practicum settings. The researchers also found an "urgent need for more comprehensive antiracism curriculum in teacher education and teaching." In addition, there are suggestions for programmatic interventions to advance an antiracism pedagogy.

Introduction

Study	Research Tradition Sample Size Variables	Findings
Wilson, Floden, Ferrini-Mundy, 2001 Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations	Research report and literature review prepared for the U.S. Department of Education	Research provided few insights into which aspects of pedagogical preparation are most critical. Field experiences are too often disconnected from university-based components of teacher education, and little is still known about the effects of new accountability systems or collaborative partnerships with schools. Alternative route programs with high standards and mentoring, requiring substantial pedagogical training and evaluation, tend to be successful in preparing qualified teachers. More needs to be known about their structures and content. Further inquiry into the specific parts of teachers' preparation (subject matter, pedagogy, clinical experiences) and their effects on teaching practice is needed. Finally, "teacher preparation research must be explicit about connections to the improvement of student achievement and about the contexts in which graduates of teacher preparation are working" (p. iv).

Part I: The Condition of the Minority Teacher in the United States		
Study	**Research Tradition Sample Size Variables**	**Findings**
Arnez, 1978 Implementation of Desegregation as a Discriminatory Process	Literature review and interpretative analysis	Discusses the demotion and dismissal of African American educators and administrators after the *Brown v. Board of Education* decision. Provides information on the regional decline in minority teachers.
Carter, 1982 Second-Generation School Integration Problems for Blacks	Literature review and interpretive analysis	Examines school practices in the era of integration that resegregated student populations within integrated school facilities. The author also discusses the problems faced by minority professionals. Displacement of African American teachers after the *Brown* decision occurred in Arkansas, Kentucky, Texas, and West Virginia. Similar to Southern city school districts, Northern school systems also failed to hire a number of black teachers proportionate to the number of black students.

Part I: The Condition of the Minority Teacher in the United States

Study	Research Tradition Sample Size Variables	Findings
Dee, 2001 Teachers, Race, and Student Achievement in a Randomized Experiment. (NBER Working Paper Series)	Tennessee's Project STAR, a statewide large-scale randomized experiment designed to systematically explore the relationship between class size and achievement over a four-year period. Achievement data for black and white non-Hispanic students were collected under three classroom conditions—small classes, regular-sized classes, and regular-sized classes with teacher aides. Random assignment of teachers and students, plus use of data on key teacher and student characteristics allowed researchers to control for many possibly confounding variables and possible alternative hypotheses.	Despite student attrition over the four years, analyses of the effects of attrition indicated that the effects of class size were robust. The results indicated for both black and white students that achievement gains were related to assignment to a same-race teacher and that these results were concentrated in the most segregated schools. It was also observed that the effect of a same-race teacher was less in small classes. However, overall, "assignment to an own-race teacher was associated with large and statistically significant achievement gains for both black and white students."
Delpit, 1986. Skills and Other Dilemmas of a Progressive Black Educator	Interpretive case study	Discusses the pedagogical contributions of African American teachers. Mentions the importance of including the insight of African American teachers in educational reform practices. For example, Delpit highlights the failure of progressive writing movements to take into consideration the needs of poor and minority students. Delpit's study also alludes to one of the fallacies to arise from the post-*Brown* era. Blacks were taught in substandard facilities, but this did not mean the education they had received was substandard in many cases. Delpit's elementary school is an example. The black nuns at her school emphasized standard English grammar use and focused their efforts on teaching these skills. When she arrived at her graduate school program and informed professors of her school conditions as a child, they often commented on how she wrote surprisingly well (p. 380).

Part I: The Condition of the Minority Teacher in the United States

Study	Research Tradition Sample Size Variables	Findings
Ehrenberg, Goldhaber, et al., 1994. Do Teachers' Race, Gender, and Ethnicity Matter? Evidence from NELS 88. (NBER Working Paper Series)	Secondary data analysis. Study attempted to examine the relationship that teacher race and ethnicity had with student performance. Data analyzed was from the NELS 88 longitudinal study conducted by the National Center for Education Statistics. Two periods of survey evaluation were conducted. Sample: black, Hispanic, and white students who took subject area tests in both 1988 and 1990. These students all attended public schools during the time period. White students in the classroom for the most part had all white teachers. The sample of test scores were of the following distribution based on subject exams: 1,776 in history, 2,848 in reading, 3,029 in mathematics, and 2,445 in science (p. 5). Variables: race, gender, ethnicity (formula on page 7). The personal and family variables in the analysis included parents' education levels, family size, family income, the student's base-year, 8th-grade adjusted test score, and whether the student was learning disabled or an English language learner. School variables were listed as total enrollment, the percentage of the student body that goes on to college, the racial composition of the student body, the percentage of teachers with a master's degree, and the highest paid salary for teachers at the school. Class and teacher variables included the number of students and the percentage of the students in the subject area that were minorities, degree held by teacher, certification in subject area, and the subject matter background (more variables are included on p. 8).	The teacher's racial and ethnic background was found not to affect student performance. However, a teacher's racial and ethnic background seemed to influence the subjective evaluations of their students. White students on average outperformed members of other minority groups. Compared to white male teachers, black male teachers were found to have produced the highest gains in history test scores for black males and both white male and female students. They were found to produce lower reading scores for Hispanic males. No differences were found on the effect of either a white male or white female teacher on the performance of white students. White female teachers were found to produce lower reading and history test scores amongst Hispanic male students, and Hispanic female students with white female science teachers were found to perform better on the exams.

Part I: The Condition of the Minority Teacher in the United States

Study	Research Tradition Sample Size Variables	Findings
Foster, 1990 The Politics of Race: Through the Eyes of African American Teachers	Interpretive case study with policy implications. The teachers were interviewed about issues of race using open-ended life history methods. This study has a sample of 16 (12 female and 4 male) African American teachers. The teachers were between the ages of 45 and 84, with the majority of them in their 40s and 50s. Their years of teaching experience ranged from 20 to 66 years. "Seven have been employed as elementary teachers for most of their careers, eight as high school teachers, and one as a junior high teacher" (p. 125).	Stories of the historical importance of African American teachers in the education of African American students during the segregation era and during desegregation.
Hudson and Holmes, 1994 Missing Teachers, Impaired Communities: The Unanticipated Consequences of *Brown v. Board of Education* on the African American Teaching Force at the Precollegiate Level.	Literature review and policy recommendations	The number of African American educators dismissed in response to the *Brown v. Board of Education* case in 1954 (at least 38,000 of 82,000 nationwide, 1954-1964; statistics as of 1990 showed further loss). The review also looks at blacks in teacher education programs. "The loss of African American teachers in public school settings has a lasting negative impact on all students, particularly [black] students and the communities in which they reside" (p. 388-389). Differing perspectives on the impact and outcomes of *Brown*. Doors opened for those trained by African American educators, but upward mobility rates declined later, perhaps because of the loss of African American teachers. Hudson and Holmes recommend "(1) Set a rigorous education agenda and high expectations for African American students; leadership is needed. (2) Engage in community planning to connect K-12 and higher education systems. (3) Participate in formulating state and fiscal policies and 'closely monitor' how and where state and local policies are implemented" (p. 392).

Part I: The Condition of the Minority Teacher in the United States

Study	Research Tradition Sample Size Variables	Findings
Milner, 2003 A Case Study of an African American English Teacher's Cultural Comprehensive Knowledge and Self-Reflective Planning	Qualitative case study of how an African American female teacher utilizes what Milner terms her "cultural comprehensive knowledge" to provide more effective instruction to her students.	Cultural comprehensive knowledge is composed of a person's cultural and gender understanding of their experiences and how that understanding alters their worldview. This reflection in turn influences their curriculum development.
Mitchell, Scott, and Covrig, 2000 Cultural Diversity and the Teacher Labor Market: A Literature Review	Using labor market segmentation theory as a framework, the researchers observed how individuals with various demographic and social characteristics have very different experiences when they enter the education labor market, particularly when these individuals are not representative of the total workforce or the student population being served. Mitchell et al. explored the task structure of teachers' work and the organizational structure of schools.	Mitchell et al. explored the task structure of teachers' work, the organizational structure of schools (with their isolated practice, limited career ladder opportunities for teachers, sparse supervision, and political and policy constraints), and the professional characteristics of individuals as the three constituent forces that influence teacher task performance and organizational fit. They noted that persistent tensions among the cultural and personal backgrounds of teachers, the task structures required for excellence in teaching, and the occupational structures of schools as complex public institutions limit both the quality and diversity of the teaching workforce.

Part I: The Condition of the Minority Teacher in the United States

Study	Research Tradition Sample Size Variables	Findings
Morris, 1967 Facts and Factors of Faculty Desegregation in Kentucky, 1955-1965	Literature review using multiple data sources on African American teachers in the state of Kentucky following desegregation.	The aftermath of *Brown v. Board of Education* saw the development of strategies to maintain racial segregation within the white school. Faculty desegregation was initiated in 1956-57. African American teachers weren't transferred with the same frequency African American students were to the newly integrated schools. Instead, the African American teachers from the black schools were dismissed and white teachers were hired to deal with the increase in the student population. Black teachers who had been assigned the role of "resource teachers" basically ran errands for the other teachers as opposed to instructing a class.
Stewart, Meier, and England, 1989 In Quest of Role Models: Change in Black Teacher Representation in Urban School Districts, 1968-1986	Correlational survey study A survey was sent to district superintendents who presided over districts with a minimum of 15,000 students. The survey was created to determine the number of black teachers in the districts. A total of 306 surveys were mailed out and 205 of these were returned. Only 174 surveys were used for the analysis part of this study, as those districts with less than 1% black student populations were disregarded. A total of 32 school districts were represented in this survey sample. African American faculty representation was measured by the difference in African American teachers in 1968 and African American teachers in 1986. Variables: (1) percent of black administrators, (2) teachers' salaries, (3) teachers' salaries v. mean income, (4) expenditures per student, (5) student/teacher ratio, (6) supporting staff ratio, (7) average student SAT scores.	Between 1979 and 1986, the percentage of African American teachers in the teaching force in these 32 districts remained fairly constant. Higher student SAT scores were found to attract African American teachers. The survey also found a positive relationship between teacher salary and the presence of African American teachers. Limitations of study: indirect measure of student quality (via SAT score) and school district wealth. High median income does not necessarily guarantee that more money will be spent on education.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Arbona, 1995 Theory and Research on Racial and Ethnic Minorities: Hispanic Americans	Literature review of occupational choice literature, recommendation for future research, and theoretical implications.	Very little attention has been given to Hispanics in literature review on career development. Framework for identifying Hispanic subgroups' characteristics relevant for career development theory and research. The author identifies five areas that need to be addressed when evaluating the career development of Hispanics. All of the five areas identified are affected by socioeconomic status and the date of migration into the U.S. These five areas are: 1. Ethnicity or racial identity. 2. Socioeconomic background or economic resources: occupation held by individuals and level of parent's educational (low, middle, high) attainment. 3. Educational attainment. 4. Assimilation level as measured by English language proficiency. 5. Experience of discrimination. The review also looks at theories of career development as they relate to Hispanic groups. Holland's (1985) scales are appropriate for testing the career development of Hispanics because the work views of Hispanics tend to coincide with those of the dominant/majority/mainstream culture (pp. 46-47). However, no research has been conducted as to what aspects of socioeconomic status or ethnicity impact career development for particular populations. Super's development theory could be used and rated for middle and upper middle class Mexican Americans, and certain segments of the Hispanic population could undergo such analysis.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Brown, 2002 The Role of Work and Cultural Values in Occupational Choice, Satisfaction, and Success: A Theoretical Statement	Interpretive study with theoretical implications Brown seeks to examine the impact of cultural values in occupational choice, satisfaction, and success.	The goal of this article is to include more cultural perspectives in the theory of occupational choice, satisfaction, and success. A person with very individualistic work values depends on highly prioritized work values to inform or determine their career choices. Also, factors that limit career choices are lower socioeconomic status, low school achievement, and fear of discrimination or hardship within the profession. A strong collective social value is presented in deferring to parents and cultural traditions in deciding upon a career. The rates of entrance into different occupations vary based on the differing value systems of men, women, and members of different cultural groups.
Brown, 1995 The Career Development of African Americans: Theoretical and Empirical Issues	Literature review of theoretical and empirical studies on the career development of African Americans Recommendations for future research	Most theories on career development derive from studies sampling white, middle-class males. The trait and factor theory, as interpreted by Brown (1990), states that there are unique traits possessed by every profession and each individual. The better the match of occupational traits to individual traits, the greater the individual output and the greater the retention within the profession. The problems when applying the trait and factor theory to African Americans are identified by the author to be the following: (1) The measurement and reliability of traits as they relate to African Americans' experience has yet to be discussed. (2) Lack of knowledge of traits specifically required of African Americans for success. These exact traits haven't been identified by researchers. (3) Testing on these above factors must be conducted before the entire theory can be applied to African Americans and gain validity amongst African Americans. *findings continued on next page*

Part II: Question 1		
Study	**Research Tradition Sample Size Variables**	**Findings**
		Roe's theory (Roe & Lunnenberg, 1990) has not been tested on African Americans. It consists of a classification system based on psychological occupations that are ranked in a spectrum based on the degree and type of interpersonal contact required in each specific field. Lunnenberg stated that the theory doesn't address the experiences of minorities. Personality, genetics, family backgrounds, and childhood experiences all impact occupational choices. Super's theory (1990) posits that self-concept plays a primary role in career choice. This assumption has been investigated using a small sampling of lower income individuals but not African Americans (p. 13). According to Super (1990), socioeconomic status guides career choices and limits career options. Super advocates that there are stages of career development. Career maturity results in future higher socioeconomic status (SES). Most African Americans are of lower SES, which results in innate racial and ethnic bias. Holland's theory (1985) has yielded the most testing of African Americans. It states that personality and jobs can be categorized in the following six categories: "realistic, investigative, artistic, social, enterprising, and conventional" (p. 15). Theory does not address long-term career retention. Holland acknowledged that racism, classism, sexism, and age discrimination restrict career choice. Holland found that African Americans tend to identify with the social type as postulated in Holland's theory, but most African Americans are also concentrated in "lower level realistic jobs" (p. 15). No congruence exists between both sets of data. The idea of career self-efficacy is based on the work of Bandera (1977, 1986). Preoccupation or concern for the outcome of field selection impacts the career a person decides to enter. For ethnic minorities, systemic discrimination impacts one's expectations of adequacy and future success (p. 17). Cheathams's Africentricity-based model (1990) refers to the oppositional framework present between African American and European American cultures. This framework results in differences impacting African Americans and their career development. This theory could be used to explain why African Americans are concentrated in social occupations.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Foster and Delpit, 1997 Black Teachers on Teaching	Individual case studies Foster and Delpit employed an open-ended life history approach. Twenty interviews conducted between 1988 and 1996 in the homes of African American teachers born between 1905 and 1973.	Profiles of two novice African American teachers: Leornard Collins, 23-year-old, second-year teacher Ashallah Williams, another novice black teacher, who attended New York City Public Schools. She talks about being pushed toward more prestigious professions such as engineering, medicine, computer science, by members of the community and high school teachers.
Gordon, 1997 Teachers of Color Speak to Issues of Respect and Image	Qualitative study relying on semi-structured interviews conducted over a two-year period. The interviews were tape recorded and transcribed. An anthropologist was hired to verify whether the researcher had the same reactions to the responses of the sample participants as had the author. 114 teachers of color (14 Latinos—7 male and 7 female; 81 African American—24 male, 57 female; 10 Native American—4 male and 6 female; 9 Asian Americans—4 male and 5 female) from grade K-12 who teach in three urban districts: Cincinnati, Ohio; Seattle, Washington; and Long Beach, California.	More respect for the teaching profession is given in communities of color. About half of the African American teachers attributed the loss of esteem in the teaching profession to integration of the schools. The withdrawal of African Americans from the field of education resulted in the decline of respect for the teaching profession. Hispanic teachers mentioned that immigrants tended to pick up negative perceptions of teachers the longer they were in the United States because they tended to adopt the views of the middle class. Asian American teachers cited that the female dominance of the teaching profession contributes to the low esteem given to the field.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Gordon, 2000 Asian American Resistance to Selecting Teaching as a Career: The Power of Community and Tradition	Qualitative interview. This study employed multiple data sources, which included the original interviews with nine students, their personal reflections, transcripts of the interviews these students conducted with community members, and the student reactions to these interviews. During Phase I: Students were trained in qualitative research methods that included "selection of and access to informants, questions and probes, tape recording, transcription, and confidentiality" (p. 5). The group of undergraduate students trained by the author included three students from mainland China, one Chinese student born in Vietnam, one Vietnamese, one Japanese, two Filipinos, and one Korean. Overall, there were three males and six females. During Phase II: Students interviewed 49 Asian Americans of various ages from a variety of ethnic, professional, and language orientations (ethnic backgrounds of the individuals listed on page 178). Each student interviewed at least five individuals. Analytical themes included the coding of frequent responses.	Gordon organized her findings as to why Asians are not entering teaching into four themes that encompass most of the responses. Theme 1: The intense pressure from parents to strive for positions perceived as having greater financial rewards and stability. Theme 2: The sense of personal inadequacy because of standards set by Chinese culture for what it means to be a teacher. Theme 3: Fear of working outside a comfort zone defined by language, diversity, taking responsibility for other people's children, and separation of private from public selves. Theme 4: The view that race-matched teaching is neither valuable nor necessary.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Hanushek and Pace, 1995 Who Chooses to Teach (and Why)?	Longitudinal survey of a cohort of high school seniors followed between 1980-1986 as part of the High School and Beyond (HSB) survey of the National Center for Educational Statistics, a longitudinal study following a cohort of high school students who expressed an interest in teaching. The survey viewed the decision to enter the teaching profession in steps. The first consists of students who in high school developed the goal and aspiration to become teachers. The remainder of the study traced which of the students with aspirations enter college, graduate, and enter the teaching profession. Variables: Choices by gender and racial background (Hispanic and black) and the academic achievement of prospective teachers. TEST, or state certification requirements. Instrument: academic achievement was measured by student performances on achievement tests. Study focused on the quality of individuals entering teaching. Composite test scores from the HSB battery of achievement tests taken in 1980 measure quality. Males constituted 20% of the original sample and 20% of the males who entered teaching. Data comparison was of Hispanics, blacks, and whites who attended college in 1982, were seniors in 1984, and were in graduate school in 1986. This study assumes that students will complete college in a four-year period and attend graduate school sometime in the two years immediately following graduation. Analysis was also conducted for 499 students at the top quartile of the achievement spectrum. Of this group, 6.2% completed their teacher training programs by 1986. Hanushek and Pace utilized standard deviations for their analyses.	Teaching aspirations did not correlate to professional attainment. Only 22% of those who had expressed interest in pursuing a teaching career had received teacher training by 1986. The individuals aspiring to become teachers in 1980 were found to be at the lower end of academic achievement than the average high school student. Only 17% were in the top quartile of the academic distribution (p. 104). Most sample cohorts teaching in 1986 were from the upper portion of the academic performance scale. Gender analysis: Males who originally expressed an interest in teaching were from the upper portion of the performance scale. Although the minority sample in this survey study was small, "high-quality (top half or top quartile) African American students exit the teaching pipeline at each stage and are not replaced with higher quality candidates during other steps. Hispanics are more likely to enter and to stay in teacher training programs. And, those who do enter teaching tend to be noticeably higher in the achievement distribution. These differences across racial and ethnic groups are consistent with the overall patterns of progress" (p. 107). Individuals who became teachers were representative of all intellectual levels of college entrants. Higher quality teachers were consistent throughout the academically achieving spectrum for every racial group. By 1986, approximately 12.5% of the teaching candidates were prepared to become teachers. Approximately 5 of the 66 African Americans who had aspired to teach in their senior year of high school became teachers. Nine of the 83 Hispanic students who had aspired to become teachers in high school had become teachers by 1986. Salary was found to play an insignificant role with students trying to enter teaching. Testing and increased course requirements decreased the number of potential teacher candidates.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Johnson, Swartz, and Martin, 1995 Application of Psychological Theories for Career Development with Native Americans	Literature review of occupational choice theory on Native Americans, recommendations for future research, and theoretical implications	Acculturation is presented in the following spectrum: (1) Traditional: Native Americans who speak very little English and can communicate in their native language. (2) Transitional: Native Americans who usually speak both their native language and English. They question traditional beliefs but don't accept the views and beliefs of the dominant culture. (3) Marginal: Native Americans who identify as Native American but have difficulty living in either the dominant culture or the native culture. (4) Assimilated: Native Americans who have embraced the values of the dominant culture. (5) Bicultural: Native Americans who are accepted by mainstream culture and who still know about their tribal beliefs. "Native American" is a broad category used to describe a wide variation of individuals. Social learning theory explains why Native Americans are attracted to careers in teaching and social work. These careers are what they are exposed to on their reservations. Native Americans often work in urban areas and reside there during the work week, but they return to the reservation during the weekends. Native Americans are at high risk of dropping out of high school.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
King, 1993 Why Did We Choose Teaching and What Will Enable Us to Stay?: Insights from One Cohort of the African American Teaching Pool	Survey study Two questionnaires were designed and utilized for the purpose of this study. The first was for beginning teachers. The second questionnaire was designed and utilized for prospective teachers. Follow-up interviews were conducted based on the need for clarification of their answers and the generalizability of their responses. Forty-one minority students (African American, Caribbean American, and African) who attended one of the nation's most prestigious teacher education programs during the 1989-1990 academic year. The participants ranged in age from 25 to 50 years.	1. When did the sample decide to enter teaching? Fifty-one percent of the sample responded that they had become interested in teaching during their undergraduate years. Beginning teachers: 44% made the decision to enter teaching during their undergraduate years. Prospective teachers: 64% cited their undergraduate years as the time in which the decision was made to enter the teaching force. 2. What initially attracted them to teaching? Prestige ranked at the bottom of the attracting factors. Beginning teachers: 11% cited the prestige of the profession as a factor in their decision to enter teaching. 3. What factors encouraged or discouraged participants to enter the teaching profession? Participants stated that other individuals such as college professors and elementary school teachers were influential in their decision to become teachers. 42% of the sample cited being "very encouraged" by their elementary school teachers to enter teaching; 25% were "somewhat encouraged" by their elementary school teachers to enter the profession; 17% were "very encouraged" by their high school teachers; and 26% were "somewhat encouraged" by their high school teachers. 4. Is it important to have minority teachers in front of the classroom in order to perpetuate the cycle? The need for minority teachers was cited by 62% of the sample as being a "very encouraging factor" and 21% saw it as "somewhat encouraging" in their decision to enter the teaching profession. Fifty-six percent of the sample said the poor conditions of minority communities was a factor "very encouraging" in their decision to enter the teaching profession. 5. Why are minorities choosing not to teach? Lack of prestige and a good salary. Also, difficult working conditions were cited as deterrents to entering the profession. Participants cited bureaucracies and the limits of the professions, as well as students; other participants stated that the lure of prestige of other professions has attracted other people.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Leong and Serafica, 1995 Career Development of Asian Americans: A Research Area in Need of a Good Theory	Literature review of occupational choice theory on Asian Americans, recommendations for future research, and theoretical implications	High concentration of Asian Americans in certain professions. Lack of vocational counseling is contributing to the concentration in certain fields. Asian Americans put greater weight on their family's opinions when making a career choice. Chinese American females were more likely to pursue careers in male-oriented fields. Yet they had a higher domestic orientation than their white female counterparts.
Leung, Ivey, and Suzuki, 1994 Factors Affecting the Career Aspirations of Asian Americans	Comparative study of the occupational choices of Asian Americans relative to the choices that would be made by their white counterparts. This study analyzed the personality structure hypothesis and the prestige hypothesis developed to explain the reasons behind the occupational choices of Asian Americans. The third hypothesis tested in this study was the role of gender in the occupational choices of Asian Americans and whites. The sample completed a demographic questionnaire about personal background and current plans relating to career and academic major. To test the first hypothesis, occupations listed on the Occupations List (Harmon, 1971, 1981, 1989; Leung & Harmon, 1990) were codified using the Holland Classification System (Holland, 1973, 1985a). It is composed of 155 occupational titles. Subjects were asked to answer if they had considered each occupation; when they had considered it; and if, when, and why they had stopped considering each occupation. *variables continued on next page*	For the first hypothesis, the researchers found that Asian Americans were just as attracted to social occupations as their white counterparts were. These occupations include teaching, helping, advising, and counseling. For the second hypothesis, the researchers noted that careers in research were of higher prestige and that they would attract more Asian American students. The findings for this study supported this claim, because Asian Americans were found to be more attracted to these careers than their white counterparts. For the third hypothesis, the study found that Asian males were more likely than their white male counterparts to consider traditionally male occupations. However, Asian American women were found to pursue nontraditional female occupations.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
	The Duncan Socioeconomic Index (SEI; Duncan, 1961) was adopted to test the second hypothesis measuring the prestige attached to each profession. The Male Dominance Index (MDI; Yanico, 1979) was adopted to test the gender-type of the occupation (406). ANOVA was used to analyze the first hypothesis. MANOVA was used for hypotheses 2 and 3. The Asian American sample group consisted of 149 undergraduate students (52 men and 97 women) attending a major university on the West Coast; 44 were Chinese (16 men and 28 women), 12 Filipino (7 men and 5 women), 21 Japanese (3 men and 18 women), 34 Korean (10 men and 24 women), 29 Vietnamese (10 men and 19 women) and 9 (6 men and 3 women) from other Asian countries (e.g., India and Pakistan). 49 subjects of this sample group were born in the United States, and the remainder of the group had resided in this country for an average of 10.4 years (p. 405). The second sample group consisted of 234 undergraduate students (92 men and 142 women) at a large Midwestern university. The researchers determined the distributional level of the father's educational attainment in the following three categories: high school, college, and postgraduate education. Researchers used the Irwin-Fisher test to test whether there was equal distribution amongst both groups. It was determined they came from the same socioeconomic backgrounds. Both groups were also representative of various academic majors and backgrounds. The Asian American group data was evaluated first to determine if there were considerable differences between those born in the United States and those born abroad.	

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Mitchell, Scott and Covrig, 2000 Cultural Diversity and the Teacher Labor Market: A Literature Review	Using labor market segmentation theory as a framework, researchers observed how individuals with various demographic and social characteristics have very different experiences when they enter the education labor market, particularly when these individuals are not representative of the total workforce or the student population being served (p.20).	Mitchell et al. explored the task structure of teachers' work, the organizational structure of schools (with its isolated practice, limited career ladder opportunities for teachers, sparse supervision, and political and policy constraints), and the professional characteristics of individuals as the three constituent forces that influence teacher task performance and organizational fit. They noted that persistent tensions among the cultural and personal backgrounds of teachers, the task structures required for excellence in teaching, and the occupational structures of schools as complex public institutions limit both the quality and diversity of the teaching workforce.
Oliver, 1988 Structuring the Teaching Force: Will Minority Teachers Suffer?	Literature review and interpretive analysis of the Holmes, Carnegie, and Times reports on the teaching profession. Carnegie Forum on Education and the Economy, *A Nation Prepared: Teachers for the 21st Century* (New York: Carnegie Foundation, 1986); The Holmes Group, *Tomorrow's Teachers: A Report of the Holmes Group* (East Lansing, Mich.: The Holmes Group, Inc., 1986); and *A Time for Results: The Governors' 1991 Report on Education* (Washington, D.C.: National Governors' Association, 1986).	Addresses how, and if, the restructuring of the teaching profession will enhance the attractiveness of the teaching profession to these populations. Challenges the assumption of the reports that teachers are a homogeneous group. Oliver discusses how career theory is mistakenly applied as a means through which to implement a restructuring of the teaching force. According to the author, career theory is developed through the majority perspective and does not acknowledge cultural, racial, and ethnic differences. The author posits that socialization theory, due to its more inclusive and diverse nature, can be used to restructure the teaching force.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Shipp, 1999 Factors Influencing the Career Choices of African American Collegians: Implications for Minority Teacher Recruitment	Survey study A two-part questionnaire. In the first part, students were asked to rate 10 factors in their decision to enter the teaching field. These factors have been identified from occupational choice theory literature (Andrews, 1983; Lortie, 1975; McManus & Matthews, 1986). The second questionnaire consisted of the same 10 factors, which included among them contribution to society, encouragement of others, ease of entry, salary, job security, fringe benefits, work environment, prestige, and intellectual stimulation (p. 345). A seven-point Likert-type scale was adopted to interpret the results. The scale ranged from a 1 (unimportant) to 7 (very important). Data on the attractiveness of the profession and the factors affecting career choice were analyzed using SD and *t* exams. During the second questionnaire, another Likert-type scale was utilized, this time measuring 1 (weak) to 7 (strong). The sample consisted of 263 African American undergraduate students pursuing both education and non-education majors. Of the 263, 110 attended predominantly white institutions of higher education, and 153 attended historically black colleges and universities. 138 (52%) of the sample participants majored in education. Variables: (1) Institution (predominantly white or historically black college or university); (2) Pursuit of an education or non-education major.	Non-education majors placed more importance on extrinsic factors such as job security, salary, and possibilities for advancement. Education majors placed greater emphasis on the service component of the profession. Both groups rated salary as one of the lower factors of attractiveness to the profession. Factors mentioned as contributing to the attractiveness of the teaching profession by both non-education and education majors were (1) attractiveness of the career, (2) intellectual stimulation, and (3) encouragement of others.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Su, 1997 Teaching as a Profession and as a Career: Minority Candidates' Perspectives	Descriptive, comparative, and exploratory case study of teacher candidates from three different ethnic groups—Asian American, African American, and Hispanic. This study employed multiple data analysis. Interview and survey instruments were adapted from The Study of the Education of Educators (Goodland, 1990; Sirotnik, 1988). Interview questions were categorized into the themes presented in the research questions. Data analysis and interpretation of statistics were applied to survey data. Content analysis was employed to organize interview data into thematic units (Sirotnik, 1988; Sax, 1979; and Miles & Michael, 1994) (p. 327). The sample consisted of teacher candidates enrolled in a one-year MAT program at a graduate school of education in California during the 1993-1994 academic year. The survey was given to all teacher candidates. The ethnic and racial demographics were as follows: 90 were white, 58 were minority students (31 Asian Americans, 5 African Americans, 21 Hispanics, and 1 Native American). Approximately 68 white students and 44 minority students responded to this inquiry. Candidates were asked questions about their beliefs in schooling ideology.	Differences were found between how minority and white teacher candidates viewed teaching. On to the decision to enter the teaching profession, the 15 white teacher candidates cited the following reasons: nine stated that they wanted to teach because they enjoyed working with young people and wanted to impact their lives; two saw their jobs as leading to societal transformation; and three were attracted to the schedule of the profession because it was suitable for when they had families. None of the white teacher candidates expressed an awareness or a concern for the educational inequalities faced by poor and minority children and what they could do about it as teachers. African American students were more adamant about the inequalities of education they confronted as young children going through the education system, and they entered the profession with the intent of rectifying or remedying the existing imbalances. Su also found that minority teacher candidates wanted to move more into the administrative and policymaking sectors of education in order to have a greater impact on the education of minority students.

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
Summerhill, Matranga, Peltier, and Hill, 1998 High School Seniors' Perceptions of a Teaching Career	Survey population study 1,537 students; 50.5% were males and 49.5% were females; 2.5% were Native Americans, 6.7% were Asian, 2.5% were black, 9.6% were Hispanic, and 78.7% were white.	Those showing strong interest in teaching had a relative who was a teacher. Items listed as important for those expressing an interest in a teaching career included (1) knowledge and skill in subject you would teach, (2) desire to work with children or young adults, (3) interest in subject you would teach, (4) availability of jobs in teaching profession, and (5) desire to serve others (p. 231).
Vegas, Murnane, and Willett, 2001 From High School to Teaching: Many Steps, Who Makes It?	Secondary analysis Survey longitudinal study conducted by the National Center for Education Statistics. For the purposes of this analysis, the researcher chose to begin by gathering data on a cohort of sophomore students. This cohort group was interviewed in 1980, 1982, 1984, 1986, and 1992. Sample: Initial sample for the study consisted of 11,816 high school sophomores in 1980. The composition of this sample was as follows: 62% were white, 21% were Hispanic, 13% were African American, 3% were Asian American, and 2% were Native American. Step 1 in 1980 consisted of 10,584 high school sophomores. Step 2 consisted of 9,125 participants who had graduated from high school and entered college. High school dropouts were excluded from the sample. *variables continued on next page*	The study revealed that, in the campaign to counteract the minority teacher shortage, more attention has to be paid to the teacher pipeline and not the occupational choices being made by minorities, who are defined as black, Hispanic, and Native American. Approximately 434 of the total sample entered the teaching profession between 1986 and 1992 (p. 431). 3.7% of white students and 3.7% of Native Americans from the original sample became teachers. 3.3% of Hispanics from the original sample became teachers, as well as 2.9% of Asian Americans. 4.4% of African Americans became teachers. Step 1 ("Who graduates from high school?"): Students with higher test scores were more likely to graduate from high school. This meant that blacks and Hispanics were less likely to graduate from high school than their white peers. Step 2 ("Who enters college?"): Asians have the highest percentage of college entrance. 69% of African American females and 67% of African American males entered college after high school graduation. In this segment of the study, it was found that, among females with the same 10th-grade academic skills African Americans were most likely to enter teaching. This step found *findings continued on next page*

Part II: Question 1

Study	Research Tradition Sample Size Variables	Findings
	Step 3 ("Who obtains a B.A.?") consisted of 5,924 college entrants. High school graduates who did not enter an undergraduate program were excluded. Step 4 consisted of 3,037 college graduates. College dropouts were excluded from the study. Statistical analyses were performed at each stage of the path into teaching: (1) the role of race and ethnicity in contributing to the individual's ability to move on to the next step. A table displaying a the racial and ethnic and gender composition of whom completed the step. (2) The probability of moving to the next step based on 10th-grade academic skills. This is determined by the use of logistic regression analyses. (3) Whether individuals of different ethnic and racial backgrounds will have different outcomes despite having the same 10th-grade academic skills. Variables: Four dichotomous outcome variables were used at every stage of the survey: (1) graduation from high school, (2) entry into college, (3) graduation from college, and (4) entry into teaching. Dummy variables were used to represent African American, Asian American, Native American, and persons of Hispanic backgrounds.	that most African American and Hispanic high school graduates with solid academic skills do enroll in college. The problem is that many minority high school graduates have relatively weak academic skills as measured by 10th-grade test scores. Step 3 ("Who obtains a B.A.?"): Asians have the highest probability of obtaining a college degree. "In all majority racial/ethnic groups, college students with relatively high 10th-grade test scores were more likely to graduate than students with low 10th-grade scores. The closeness of the curves illustrates that the graduation rates of white, black and Hispanic students with the same 10th-grade academic skills are very similar. This pattern suggests that increasing the quality of black and Hispanic students' preparation for college would significantly reduce the gap between their college graduation rates and that of white college students" (p. 438). Step 4 ("Who enters teaching?): Of college graduates, Native Americans (58%), Hispanics (24%), and African Americans (29%) have the highest percentage of teacher entry. This study found that although women of all racial and ethnic groups were more likely than men to enter the teaching profession, women with higher academic abilities were least likely to become teachers, although there was a very slight difference. Controlling for 10th-grade academic skills, African American female college graduate students were more likely to pursue a career in teaching (p. 440). However, the study also found that this is not the case for increasing the number of Native American teachers. "Raising the average academic preparation of Native American high school students to that of white high school students would not eliminate the gaps between these groups' high school graduation, college enrollment, and college graduation rates" (p. 441).

Part II: Question 2

Study	Research Tradition Sample Size Variables	Findings
Bell and Morsink, 1986 Quality and Equity in the Preparation of Black Teachers	Program strategy reviews	Solutions are emerging for attracting and retaining minority teachers. 1. Development of testwiseness programs 2. Providing minority students with mentors and role models
Bennett, 2003 A New Approach to Performance Assessment	Program description	The Teacher Work Sample approach (TWS) provides a teacher-testing measure of performance assessment that has become a viable alternative to traditional teacher examinations (paper and pencil tests) and may be a better test of teacher effectiveness. It is being used at Emporia State University and has proved valuable there. Formal research is being conducted currently.
Case, Shive, Ingelbretson, and Spiegel, 1998 Minority Teacher Education: Recruitment and Retention Methods	Survey review to assess minority student enrollment in member institutions and examine current practices of minority student recruitment and retention in colleges of education. The sample included 108 universities and colleges (63% return) with teacher preparation programs.	Thirty-eight percent of colleges admitted that entrance criteria were obstacles for minorities. Study found attrition at entrance to student teaching: 84% of institutions required a minimum GPA, 23% a standardized test, and 15% field experience. Difficulty adjusting to white campuses and a need for support services to remain in the program.

Part II: Question 2

Study	Research Tradition Sample Size Variables	Findings
Hood and Parker, 1989 Minority Bias Review Panels and Teacher Testing for Initial Certification: A Comparison of Two State Efforts	Review of relationships: a comparison of the activities of minority bias review panels in two states, Illinois and Pennsylvania	In Pennsylvania: • Minorities were well represented in the development of the review panels. • Minorities played an advisory role in examining bias in test items. In Illinois: • The minority bias review committee was an integral part in the process of development and review of test items Bias review panels should be utilized fully to ensure continual multicultural inclusion in the teacher certification process.
Gitomer, Latham, and Ziomek, 2003 What the Tests Tell Us About New Teachers	Research review	Candidates applying for their teaching license have reasonably strong academic skills. Admissions and licensure testing clearly raise the academic ability of the population by denying access to those with lower grades. The ethnic composition of the teaching force does not come close to matching that of the K-12 student population, and this trend does not seem likely to change anytime soon.
Memory, Coleman, and Watkins, 2003 Possible Tradeoffs in Raising Basic Skills Cutoff Scores for Teacher Licensure	Predictive survey: supervisor evaluation of effectiveness based on 11-item scale Linear regression analysis Sample: 161 student teachers Examined impact on the licensure of teachers that might be predicted to result if a cutoff score were raised by one point.	A one-point increase in the PPST reading test qualifying score for teacher licensure eliminated approximately 5% of African American test takers from entry into teaching. A one-point increase in the writing test eliminated 9% of African American test takers. A one-point increase in the mathematics test qualifying score eliminated 4% of African American test takers.

Part II: Question 2

Study	Research Tradition Sample Size Variables	Findings
Justice and Hardy, 2001 Minority Students and the Examination for the Certification of Educators in Texas (ExCET)	Survey: testing for self-reported factors contributing to test success or failure using multiple regression Sample: 39 African American and Hispanic students who had taken the ExCET exam Telephone interviews and student records. Variables include ExCET scores, ethnicity, credit hours, GPA, graduate grade points earned, and Texas Academic Skills Program (TASP) reading scores	Students who passed the ExCET exam had a higher composite undergraduate GPA and higher mean TASP reading scores than their ExCET-failing peers. Seventy percent of all students reported participating in test practice sessions. 12 out of 27 students felt the test was biased. Others felt that the test had no relationship to "real life." Most students indicated that the acquisition of test-taking strategies and participating in practice sessions contributed to a positive outcome. GPA was found to be a weak predictor of success on the ExCET for select minority students.
Smith, 1988 Tomorrow's White Teachers: A Response to the Holmes Group	Policy perspective	The national teacher competency testing movement consisting of separate state testing policies has the effect of being the single greatest assault on affirmative action in a profession. Disproportionate numbers of minority candidates are failing admission and teacher certification tests. In the South, one third of the veteran black teaching force is approaching retirement. The new agenda for reform must not create new policies that perpetuate old inequities. Failure to ensure that the instruments used to measure competence minimize the influence of poverty, race, and ethnicity will render all other proposed solutions ineffective.

Part II: Question 2

Study	Research Tradition Sample Size Variables	Findings
Smith, Miller, and Joy, 1988 A Case Study of the Impact of Performance-Based Testing on the Supply of Minority Teachers	Interpretive case study of Florida's testing program Multiple regression analyses on data from Florida student scores on the SAT and ACT	• Students who aspire to teach must pass six competency examinations. • These testing requirements eliminate disproportionate numbers of minorities at every point along the path.
Spellman, 1988 Recruitment of Minority Teachers: Issues, Problems, Facts, Possible Solutions	Research review	After an analysis of facts and possible solutions, two general recommendations emerge: • Optimize conditions on campus that will encourage successful completion of the teacher education program by minority candidates. • Develop programs to recruit more qualified minorities into teacher education.
Youngs, Odden, and Porter, 2003 State Policy Related to Teacher Licensure	Policy review and demographic analysis Article based on study of teacher licensure exams in all 50 states to determine if performance assessment tests were used in addition to the test of basic skills, content knowledge, and pedagogy to determine licensure decisions.	Few states used performance assessments to make licensure decisions. Challenges to performance assessments include cost, test validity, reliability, and fairness. There is little research from states regarding intent in the future to change state policy on this issue.
Zeichner, 2003 The Adequacies and Inadequacies of Three Current Strategies to Recruit, Prepare, and Retain the Best Teachers for All Students	Research review	Three major agendas shape the reform of teacher education: • Professionalization (NCATE) agenda • Deregulation agenda • Social justice agenda Each agenda makes some contribution, but all have weaknesses and fail to provide equality in the issues of recruiting, preparing, and retaining the best teachers. Need to aggressively advocate for the societal conditions that need to be present if equality in education is to be achieved.

Part II: Question 3

Study	Research Tradition Sample Size Variables	Findings
Alliance for Equity in Higher Education (Redmond et al.), 2000 Educating the Emerging Majority	Research and policy review This review cites an Educational Testing Service study that examined 300,000 prospective teachers on SAT, ACT, and PRAXIS scores during 1994-1997.	Minority-serving colleges and universities play an important role in confronting the minority teacher shortage. The focus is on two policy issues: 1. The need for government funding. 2. The need to address the issue of teacher-testing standards and the detrimental effect they have on the number of qualified minority teachers. Results indicated that white students pass the PRAXIS tests at higher rates than minorities and that state variations in passing rates affect the racial and ethnic diversity of the teaching pool.
Clewell & Villegas, 2001a Absence Unexcused: Ending Teacher Shortages in High-Need Areas.	Program evaluation: Pathways to Teaching Careers Program, 1999-2000 academic year Surveyed: 26 paraprofessional and non-certified teachers' programs and 14 Peace Corps Fellows programs (N=2,593)	The Pathways Program exceeded its overall recruitment goal by 18% and increased the number of potential minority teachers by 15%. Pathways participants' completion rate of teacher certification was 75%, higher than the national average of 60%. Pathways graduates were perceived to be effective teachers by three independent assessors working at three different stages of the process. A follow-up study survey showed that 81% had remained in teaching for at least three years.
Dandy, et al. 2001 Selecting and Preparing Quality Teachers from the Non-Certified Personnel Pool	Program review: the Dewitt Wallace-Reader's Digest Pathways to Teaching Program at Armstrong Atlantic State University	Strategically screened non-certified school district personnel who have • exemplary work records • better than average college grades • a commitment to teaching The review found that these students can make quality teachers if participating universities and school districts provide them with financial and emotional support to surmount the obstacles posed by a family, full-time employment, and a return to college.

Part II: Question 3

Study	Research Tradition Sample Size Variables	Findings
Gederman, 2001 The Role of Community Colleges in Training Tomorrow's School Teachers	Program review	Community colleges enroll 50% of all undergraduate minority students and serve as important entry points into the higher education pipeline. They are important resources in recruiting new teachers but are often overlooked within the teacher education system. Survey determined that only 54% of responding community colleges have teacher preparation programs.
Gifford, 1986 Excellence and Equity in Teacher Competency Testing: A Policy Perspective	Program review: nine-college consortium to recruit minority teachers	Collaborative process analyzed in terms of factors that have been identified in the literature as contributing to effective collaboration: commitment, mutual needs and interests, clarity of goals, sufficient time, effective communication, resources, leadership, and ongoing evaluation.
Gordon, 1988 Implicit Assumptions of the Holmes and Carnegie Reports: A View from an African-American Perspective	Policy perspective	Excellence cannot be achieved unless people of color and the poor receive support services and systems, enriched curriculum, remedial education, well-qualified teachers, and teaching methods that enhance a child's potential. Need stepped-up research on teacher education, teaching and learning of academic subjects, and identifying a knowledge base that supports teaching practice.
Hunter-Boykin, 1992 Responses to the African American Teacher Shortage: "We Grow Our Own" Through the Teacher Preparation Program at Coolidge High School	Program review: Teaching Professions Program (TPP), Coolidge High School, Washington D.C.	TPP program best known for a "grow your own" perspective. Focuses on attracting talented students of various socioeconomic backgrounds to teaching careers and involving educators from the community to assist in supporting potential teacher candidates both academically and socially.

Part II: Question 3

Study	Research Tradition Sample Size Variables	Findings
Ng, 2003 Teacher Shortages in Urban Schools: The Role of Traditional and Alternative Certification Routes in Filling the Voids	Policy review	The relatively homogeneous profile of preservice teachers trained in traditional university programs can create an environment that sustains existing racist attitudes and preconceptions regarding urban schools. This undermines urban recruitment efforts because preservice teachers are reluctant to accept the challenges of working with predominantly minority, low-income children, putting in question the quality of education for minority children. Adopting an organizational perspective to the problem of teacher shortages in urban schools has potential to broaden the scope of educational research.
Middleton, Mason, Stilwell, and Parker, 1988 A Model for Recruitment and Retention of Minority Students in Teacher Preparation Programs	Systems design	Applies a systems design originally developed by Stilwell to the development of a recruitment model for minority students in teacher education programs.
Odell, McKinney, Perkins, and Miller, 2001 Selecting, Preparing, and Mentoring Teachers in Urban Contexts	Program review in Southern Regional Education Board (SREB) states	Minorities account for 43% of students in SREB states but only 21% of teachers. More than half of all African American undergraduates in the nation attend college and universities in the SREB states. While numbers of teacher education programs have increased in some states, relatively few of these graduates are minorities. States need to look beyond new college graduates to people who may want to change careers or former teachers who may want to return to the classroom.

Part II: Question 3

Study	Research Tradition Sample Size Variables	Findings
Clewell et al., 2000 (The Urban Institute) Literature Review on Teacher Recruitment Programs	Literature review	Part of a multiyear evaluation of the Higher Education Act's Title II program to recruit teachers with a focus on the minority teacher gap. Describes teacher recruitment programs with longitudinal quantitative and qualitative outcome evaluations.
Vegas, Murnane, and Willett, 2001 From High School to Teaching: Many Steps, Who Makes It?	Longitudinal survey: four samples originating in the sophomore cohort of High School and Beyond (1992) Outcome variables: graduation from high school, entry into college, graduation from college, and entry into teaching	The critical challenge to increasing the number of minority teacher candidates is increasing the high school graduation, college enrollment, and college graduation rates of minority youth. • Native American, black, and Hispanic high school sophomores are less likely to obtain high school diplomas than are white and Asian American sophomores. • Among students in every racial and ethnic group, those with higher 10th-grade test scores were more likely to graduate from high school. • College entry rates for Hispanic and Native American high school graduates lag behind those of African Americans (68%), whites (68%), and Asian Americans (79%). Asian American students have the highest rate of graduation from college, followed by whites. Hispanic and black rates are considerably lower and Native American rates are by far the lowest.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Au and Blake, 2003 Cultural Identity and Learning to Teach in a Diverse Community: Findings from a Collective Study	Case study: looks at the influence of cultural identity—ethnicity, social class, and community membership—on the learning of three preservice teachers. One was a Japanese American, an outsider to the low-income Hawaiian community, and the other two were of Hawaiian ancestry and insiders to the community.	Findings suggested that preservice teachers who differ in terms of cultural identity may gain different benefits from participation in a program designed to prepare them to teach in a diverse community. For outsiders, critical understandings may develop as a result of field experiences; for insiders, critical understandings may evolve as a result of course readings, class discussions, and written reflections.
Carter, 2000 Reimagining Race in Education: A New Paradigm from Psychology	Review of literature and interpretation Provides a description of approaches to multiculturalism with an understanding of power in relation to race-based perspectives.	Creates a typology to examine and develop theory, training, and research in multicultural education and suggests that racial identity theory serve as a conceptual framework and guide to practical application for implementation of inclusive racial and cultural curriculum, schools, and learning environments, and as a guide to district policy and practice.
Darling-Hammond, Chung, and Frelow, 2002 Variation in Teacher Preparation: How Well Do Different Pathways Prepare Teachers to Teach?	Survey research and comparative analysis Representing nearly 3,000 beginning teachers in New York City (response rate: 33%) Factor analysis, analysis of variance, and regression analyses to test for differences among groups DVs: teachers' perceptions of their preparedness for teaching, their beliefs about teaching, their views of their practice, and their plans to remain in teaching. IVs: Certification status and preparation pathway. Descriptive information about the characteristics of each program was also collected.	No teacher education program resulted in teachers' feeling less than adequately prepared overall. Teachers who were prepared in teacher education programs felt significantly better prepared across most dimensions of teaching than those who entered through alternative programs or without preparation. The two most highly rated programs (at Bank Street College and Wagner College) both emphasize strong relationships among students, staff, and schools, and extensive, carefully supervised clinical work that is tightly linked to coursework emphasizing the development of content-based pedagogy. Neither the certified nor the non-certified (alternate-route) teachers felt well prepared to use technology to support instruction or to teach new English-language learners. Teachers' sense of preparedness was related to their sense of efficacy in the classroom. In turn, sense of preparedness and self-efficacy seemed related to their plans to stay in teaching.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Dillard, 1994 Beyond Supply and Demand: Critical Pedagogy, Ethnicity, and Empowerment in Recruiting Teachers of Color	Personal narrative and program development 21 undergraduate students of color interested in careers in education and graduate study participated in an eight-week summer research institute (Opening Doors) with explicitly stated objectives in the summer of 1992. The program included identification of talented undergraduate minority students with potential for success in graduate study in education; provision of an interactive environment for students to grow in their understanding of self; increased student understanding and knowledge of graduate study in education.	A year later, 11 of the 21 students were enrolled or in process of enrolling in graduate study in fields of education (K-12 and higher education). Three were teaching in public schools, two of them in bilingual programs. Four of the remaining seven were in their senior year of undergraduate study, two were employed at Ohio State University as the African American and Native American student recruiters, and one was teaching in Colombia, South America.
Dlamini, 2002 From the Other Side of the Desk: Notes on Teaching About Race When Racialised	Personal narrative Draws from the author's experiences as a black woman teacher-educator in a predominantly white institution, examining complexities involved in classroom application of critical pedagogy and antiracism education.	Concludes by offering suggestions for future practices in teacher education programs, including the need to examine the relationship between culture and power; she also adds that this examination calls for an awareness that challenging belief systems is synonymous with challenging ways of living and challenging invested territories and practices.
Jones, Maguire, and Watson, 1996 The School Experience of Some Minority Ethnic Students in London Schools During Initial Teacher Training	Interpretive and survey research Charted progress of a sample of 19 trainee teachers, of whom 13 were black and 6 white. Sample was constructed to take account of the communities represented in the program cohort. Individual students were selected at random and their participation was negotiated at the start of the course, before school experiences started. Teacher mentors were also interviewed.	Generally students encountered a full range of in-school experiences, from high levels of professional and emotional support to extremely unpleasant, negative, and damaging encounters. From interview data, black and other minority students overwhelmingly reported feelings of discomfort in their school placements. Trainee teachers from all backgrounds are sometimes forced to fit in within a setting or an ethos with which they are uncomfortable.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Jorissen, 2003 Successful Career Transitions: Lessons from Urban Alternate Route Teachers Who Stayed	Descriptive qualitative study and in-depth interviews (portion of larger study) Relational exploration (acknowledging the work environment as a social context in which growth occurs and therefore is appropriate in studying teacher development) that examined multiple factors in the retention of six teachers, prepared in a long-term alternate-route program, who were still working in urban schools a full six years after they received their initial licenses.	Findings indicated that the program assisted them in successfully making a transition from other careers into teaching. Program instruction in content, pedagogy, and the development of close professional relationships with their mentors and other members were all components. Findings imply importance of addressing the developmental needs of individuals undertaking career transitions into teaching.
Lee, 2003 Why We Need to Re-think Race and Ethnicity in Educational Research	Interpretive/descriptive narrative (introduction to special theme issue) Narrative reconceptualizes race and ethnicity in educational research. Rationale includes the historical and contemporary ways that cultural differences have been positioned in educational research.	Calls for more nuanced and complex analyses of ethnicity and race than have characterized the field of educational research before. Fundamental challenge is how educational research can be conceptualized to include the varied struggles faced by large proportions of African Americans, Latinos/as, Native Americans, Pacific Islanders, and European Americans who face persistent intergenerational poverty (the normative psychosocial development tasks they face; racism; access to institutional resources such as schools and health care services; and the range of diversity within ethnic groups, among others).

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Paillotet, 1997 "I'm Really Quiet": A Case Study of an Asian Language Minority Preservice Teacher's Experiences	Case study Describes Vivian, an Asian language-minority student, and her experiences during two years of preservice preparation. Data sources included informant, faculty, peer, and family interviews; participant observation field notes; student work; videotapes; course syllabi; and program documents. Constant comparative analysis revealed that Vivian faced many difficulties: conflicts among past and present experiences, language and communication problems, tensions between home and school, financial concerns, social isolation, stereotyping, and prejudice.	Implications and recommendations for classroom instruction, policy, and future research in preservice education are discussed. Vivian's story may be similar to that of many other minority-language students, and results indicated that racial, cultural, linguistic, economic, and social barriers remain serious problems. This case study indicates a need for changes in practice and policy, increasing awareness, and further inquiry, particularly using case studies, personal narratives, and collaborative projects by and about language or ethnic minority preservice teachers. Also shows need for faculty to take more of a personal responsibility for motivating minority students.
Quiocho, and Rios, 2000 The Power of Their Presence: Minority Group Teachers and Schooling	Literature review and descriptive synthesis Focuses on reports published between 1989 and 1998 of the experiences of preservice and inservice minority group teachers in a public school context.	Review demonstrated the power of the presence of minority group teachers but also demonstrated the obstacles to full realization of their potential.
Rodriguez, and Sjostrom, 2000 Faculty of Color in Teacher Education: A Multicultural Approach to Mentoring for Retention, 2000 and Beyond.	Literature review and descriptive synthesis A discussion about preparing, mentoring, and retraining future teacher educators of color using a multicultural approach, although controversial, must be included in the process of becoming an academic and a teacher educator.	Institutional values, goals, and operational theories need to be examined in light of mentoring the next generation of teacher education faculty for diversity; the need to promote multiple perspectives is central. Mentoring can be a change agent for the next generation of teacher education faculty and institutions of higher education, but traditional and hierarchical models of mentoring must be challenged for a vision of mentoring that emphasizes the acceptance of difference. Such a challenge could transform teacher education to become compatible with nation's diverse society.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Root, Rudawski, Taylor, and Rochon, 2003 Attrition of Hmong Students in Teacher Education Programs	Descriptive study, which includes a review of the literature on Hmong Americans and provides an overview of two projects Study addressed student attrition in two Title VII bilingual education career ladder programs for Hmong paraprofessionals and traditional-age college students working toward teacher certification in Wisconsin. One project was in its fourth year, the other in its third. Authors assessed primary factors leading to student attrition in these projects.	Findings suggested certain strategies that could be used to maximize retention, such as providing students with realistic assessments of student-family finances, obligations, and the time they would need to complete the program; increasing mentoring and support; increasing language and cultural comfort factors; adjusting time slots of course offerings; providing financial support; and changing U.S. Department of Education guidelines for allowable expenses.
Sheets, and Chew, 2002 Absent from the Research, Present in Our Classrooms: Preparing Culturally Responsive Chinese American Teachers	Qualitative design study using multiple data sources Subjects included 32 participants. This qualitative design was part of five-year evaluation of the ABC Project and examined participant behavior and participants' appraisal of program value, including the content, process, and context of a required diversity course. Sources included questionnaires, participant profiles, surveys, interviews, focus groups, documents from school and program, and classroom observations.	One significance of this study lay in its determined attempt to mitigate the invisibility factor of Asian Americans, particularly Chinese Americans, in teaching and to increase understanding about the preparation of Chinese American teachers. Researchers found that these students often take courses dominated by mainstream preservice teachers, are excluded from the course curricular content, and teach in linguistically segregated classrooms, but are expected to prepare students in monocultural setting to function effectively in a pluralistic society. There is a need to improve programs to specifically prepare Chinese American teachers to serve Chinese American students. Most of the faculty in this project—tenured, tenure-line, and adjunct—did not attend or teach in K-12 schools with a significant Chinese American student population, which may be typical of other universities.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Siraj-Blatchford, 1991 A Study of Black Students' Perceptions of Racism in Initial Teacher Education	Open-ended interviews with four black students to determine main areas to be studied. Small-scale survey then prepared to which 68 students responded. Students' perceptions of racism included all the interpersonal, institutional, structural, and cultural practices that black students identified as such. Analysis was restricted to experiences that took place in institutional context (racial intimidation and attacks that occurred outside of context were thus excluded).	Findings suggested that factors as varying as accommodation, courses, and school placements influence the perceptions of students. Black students' experiences need to be as positive as those of their white peers. Institutions and departments within which these students are educated have direct responsibility to set up adequate procedures to deal with racism at all levels.
Solomon, 2000 Exploring Cross-Dyad Partnerships in Learning to Teach	Survey research and comparative study Three cohorts, each of 44 teacher candidates (from 1994-1997) representing the race and ethnocultural diversity of school communities served by the University of Western Ontario. Data-gathering strategies included individual and focus group interviews by research assistants from white and minority groups, observation of dyad partners in their practicum settings, analysis of journal entries, and end-of-year written evaluations of dyad system by all three cohorts. Cross-race partnerships of two candidates per classroom were set up. Program expectations were that dyad partners would develop a working relationship, utilizing one another's cultural knowledge and experiences and jointly observe and discuss the teaching-learning process, prepare and team-teach lessons, and participate as a team in post-lesson debriefings.	Study revealed that pairing racial minority and dominant-group teacher candidates in field-based practicums broke down some racial barriers, dealt with some racial and cultural issues, helped in awareness and ability to function in cross-race domains, and also laid foundation for long-term social and professional relationships. However, findings also uncovered institutional culture that interpreted racial difference as deficit and generated paralytic anxiety for minority candidates, marginalizing them in the communication process, which limited potential of partnerships to be collegial.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Solomon, and Rezai-Rashti, 2001 Teacher Candidates' Racial Identity Development and Its Impact on Learning to Teach	Literature review and interpretive study One-year study also included pre-program baselining using various profiles, surveys, and interviews; practicum classroom observations; and follow-up interviews as well as post-program evaluations and analysis of data. Subjects were 36 post-baccalaureate pre-service teachers, which included white Canadian, Guyanese, West Indian, Asian (Indian and Pakistani), and Egyptian students (to ensure equitable representation across racial population of Ontario) at one of York University's off-campus sites. This research examined the study of race, racism, and antiracism pedagogy in mainstream preservice teacher education and preparation of teachers to implemtent antiracism education into their everyday classroom practice. Research was designed to identify teacher candidates; identify stages of racial identity development in terms of attitudes, knowledge, and behaviors toward racialized minorities in schools and Canadian society at large; establish linkages between a teacher's racial identity and the educational and life opportunities of minorities; and recommend a teacher education pedagogy—including curriculum content and methodological approaches—that would help teacher candidates grow personally and professionally to a higher level of competency and commitment to teach racially different students.	Findings included definition of concept of "dysconscious racism"—that is, that teachers unconsciously implement institutional policies and practices that legitimize assumptions and stereotypes about racialized minorities. Study also includes recommendations for a better screening process for those entering teacher education and for field-based support staff in practicum settings. The study also found that there is an "urgent need for more comprehensive antiracism curriculum in teacher education and teaching" (p. v). In addition, there are suggestions for programmatic interventions to advance an antiracism pedagogy.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Tellez, 1999 Mexican American Teachers and the Intransigency of the Elementary School Curriculum	Semi-structured interviews Subjects: four Mexican American student teachers This study addressed how these teachers "used" their ethnicity during student teaching—if and how they expressed their cultural knowledge in lesson planning and implementation of instruction.	Findings revealed that these teachers used little ethnic expression, even when they taught Mexican American children. Implications for teacher education programs are also presented. For example, the author suggests that "it makes little sense to lament over the fact that we do not have enough minorities in teacher education when they are not given the opportunity to engage in the very thing teacher educators have allegedly recruited them to do" (p. 568). Author also recommended that student teachers be given the opportunity to infuse the curriculum with their cultural knowledge in a developmental setting and that they should learn to do this during student teaching. In addition, she suggested that dominant-culture student teachers also can be better prepared to teach students of color than they are now.
Trent, 1990 Race and Ethnicity in the Teacher Education Curriculum	Policy analysis argument Author presents a series of arguments for his proposal that the importance of race and ethnicity in education should become a primary area of study for the prospective teacher. He notes in addition that despite the fact that black and Hispanic students are among groups who will constitute an ever-increasing proportion of students in U.S., they are the least well-served by schooling in this country. The problem is aggravated by the opposite trend in the proportion of minority students who will become teachers; he believes this necessitates new understandings and new approaches for majority-population teachers who will be called upon to teach increasing numbers of minority youth.	Trent's arguments for the importance of race and ethnicity in education include: • The realities of demographic diversity • Economic incentives— that we cannot compete in a modern world if educational needs of a third or more of the future labor force of this country is ignored • The trend in the composition of the teaching force, which is increasingly female and white • The idea of competence—that no occupation can lay claim to title of profession if it is unable to treat a third of its clients or fails in the attempt • The idea that it is imperative to protect the human and civil rights of the clients.

Part II: Question 4

Study	Research Tradition Sample Size Variables	Findings
Wilson, Floden, and Ferrini-Mundy, 2001 Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations	A research report prepared for the U.S. Department of Education by the Center for the Study of Teaching and Policy in collaboration with Michigan State University. The report provides a framework for synthesizing the existing research on teacher preparation through the exploration of five questions: 1. What kinds of subject matter preparation, and how much of it, do prospective teachers need? 2. What kinds of pedagogical preparation, and how much of it, do prospective teachers need? 3. What kinds, timing, and amount of clinical training (student teaching) best equip prospective teachers for classroom practice? 4. What policies and strategies have been used successfully by states, universities, school districts, and other organizations to improve and sustain the quality of preservice teacher education? 5. What are the components and characteristics of high-quality alternative certification programs?	Recommendations for future research on teacher preparation are outlined. These include research design principles, domains of future research in teacher preparation, and investment opportunities. Also included are appendices for elaboration of criteria for rigorous research, summaries of reviewed research, and references for research reviewed in the report as well as other resources.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Claycomb and Hawley, 2000 Recruiting and Retaining Effective Teachers for Urban Schools: Developing a Strategic Plan for Action	Policy and planning document that reviews research literature on teacher induction and retention and presents evaluation results for a number of induction and retention initiatives across the U.S. Results from evaluations of two case studies are also reported.	Cites Mitchell et al. (2000) and others regarding the characteristics of high-quality induction programs: (1) standards-based; (2) experienced teachers as mentors (mentoring focuses on needs defined by new and mentor teachers); (3) opportunities to develop both skills and knowledge; (4) ongoing opportunities to reflect on and improve practice; (5) consistent, designated funding; (6) continuing professional development for mentors. Findings from two case studies of model teacher induction programs in New Mexico and Cincinnati indicated that many induction-related costs associated with hiring, orienting, and evaluating new teachers can be recovered by lowering attrition rates.
Darling-Hammond, Chung, and Frelow, 2002 Variation in Teacher Preparation: How Well Do Different Pathways Prepare Teachers to Teach?	Survey of nearly 3,000 beginning teachers in New York City (representing a response rate of 33%) Factor analysis, analysis of variance, and regression analyses to test for differences among groups DVs: teachers' perceptions of their preparedness for teaching, their beliefs about teaching, their views of their practice, and their plans to remain in teaching. IVs: Certification status and preparation pathway. Descriptive information about the characteristics of each program was also collected.	No teacher education program resulted in teachers' feeling less than adequately prepared overall. Teachers who were prepared in teacher education programs felt significantly better prepared across most dimensions of teaching than those who entered through alternative programs or without preparation. The two most highly rated programs (at Bank Street College and Wagner College) both emphasize strong relationships among students, staff, and schools and extensive, carefully supervised clinical work that is tightly linked to coursework emphasizing the development of content-based pedagogy. Neither the certified nor the non-certified (alternate-route) teachers felt well prepared to use technology to support instruction or to teach new English language learners. Teachers' sense of preparedness was related to their sense of efficacy in the classroom. In turn, sense of preparedness and self-efficacy seemed related to their plans to stay in teaching.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Dillard, 1994 Beyond Supply and Demand: Critical Pedagogy, Ethnicity and Empowerment in Recruiting Teachers of Color	Interpretive case study of an intensive summer institute designed to prepare minority students for success in graduate education programs and scholarship through experiences designed to develop greater self-understanding as a foundation for academic success, and skills related to research and scholarship N=21	Students were able to understand their own cultural experiences and clarify their own identity in a way that increased their self-confidence and seriousness of purpose regarding their decision to teach. They did this through dialogue journals, creating an autobiography through any means but writing, and weekly journal sharing. By conducting an original research project and presenting their findings at a university-wide forum, students were able to gain academic competencies and increase their confidence that they could do graduate-level work successfully. Dillard also modeled for the students how diversity issues could be presented in an external conference. Outcomes: One year later, 11 of 21 students were enrolled or in the process of enrolling in graduate study in fields of education (K-12 and higher education). Three were teaching and four were still in undergraduate study. Two were admissions recruiters and one was teaching in South America.
Freedman, 2000 Teachers as Grantseekers: The Privatization of the Urban Public School Teacher	Interpretive case study Thirty teachers were interviewed regarding grant writing, and the researcher conducted an intensive case study with one successful minority teacher grant writer.	Grant writing is increasingly required and valued by the schools but requires certain cultural capital (academic writing skills in English, knowledge of effective practice, research skills, budgeting, and self-marketing skills). About 19% of the town's teacher population wrote grants. Although the teacher population was 65% white, 85% of the grant awards went to white teachers. Only 1% of the grant winners were native speakers of languages other than English. The language of successful grant writing is very general, and as a result, diversity is marginalized in the process.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Holloway, 2002 Mentoring for Diversity	Article: review of changing demographics and declining proportions of minority teachers; case study showing mentoring as an important aspect of both the recruiting and nurturing of minority teachers	Reviews research that supports the importance of mentors and role models for minority teachers and teacher candidates. The literature reports that mentoring is an important aspect of both the recruiting and nurturing of minority teachers.
Kestner, 1994 New Teacher Induction: Findings of the Research and Implications for Minority Groups	Review of the literature with implications and recommendations for practice	New teachers receive an abrupt introduction to full-time teaching, as well as difficult assignments. In addition, they get little formal assistance. Perhaps as a result, about 50% leave teaching in the first 5 years; 80% leave the profession in 10 years. New teachers need concrete models to emulate, clear criteria for evaluation, and positive supervision and support. Summarizes assertion of Darling-Hammond (1985) that new teachers may experience problems, but do not understand the causes or have strategies to analyze the behaviors or address the needs of minority students. Scholars studying new teacher induction have produced little research addressing the lack of treatment of minorities' needs in these programs. In fact, research on induction does not usually overlap with multicultural issues, leaving a serious gap in new teacher preparation. The author recommends that programs be designed to equip all new teachers with the tools they need to promote high achievement in all students and that these programs be designed for the specific contexts in which the programs will operate. Proposed options include specially designed workshops for new teachers, assigning experienced mentors, using case studies and videos for discussion, journal writing, and "active engagement of faculty members in frequent, serious discussion" (p. 43).

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
McAllister and Irvine, 2002 The Role of Empathy in Teaching Culturally Diverse Students: A Qualitative Study of Teachers' Beliefs	Interpretive case study of practicing teachers' beliefs regarding the role of empathy as an attribute of effectiveness with culturally diverse students (N = 34)	Findings emerged from content analysis of over 125 documents generated by CULTURES, a multicultural, interactive professional development seminar designed to help foster culturally responsive practice. Teachers reported more positive interactions with culturally diverse students, more supportive classroom climates, and more student-centered practices. The experiences perceived as most valuable in changing teachers' practice for the better included a cross-cultural simulation, cultural immersion trips, and their own experiences as minorities.
Milner, 2003 A Case Study of an African American English Teacher's Cultural Comprehensive Knowledge and Self-Reflective Planning	Interpretive case study of one African American high school teacher's experiences and how they informed her planning	The study defined cultural comprehensive knowledge as an expansion of practical knowledge, including the accumulated cultural, racial, and gender experiences that shaped how the subject of the study understood and represented issues in the world. The researcher argued that this knowledge was central in the teacher's thinking and instructional decision making, and that she engaged in a form of self-reflective planning that informed and shaped her lessons.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Milner and Hoy, 2003 A Case Study of an African American Teacher's Self-Efficacy, Stereotype Threat, and Persistence	Interpretive case study of one subject's source of self-efficacy (Bandura, 1997)	The researcher attempted to identify and interpret the sources of the teacher's self-efficacy and persistence in an unsupportive environment. Self-efficacy was reported as one of the few teacher characteristics related to student achievement (Milner & Hoy, citing Armor et al., 1976) and a teacher's willingness to explore new ideas and experiment with new strategies. The researcher used Bandura's four postulated sources of efficacy (mastery experiences, physiological and emotional states, vicarious experiences, and social persuasion) as a framework for interpreting the teacher's reflections. He identified parallel themes in that the teacher found sources of support in the responses of and relationships with her students, her strong relationships with the community outside the school, and her memories of and pride in her academic achievement and earned doctorate. The teacher also reported stereotype threat in her environment, responding to perceived negative stereotypes by taking on extra responsibilities and developing a moral license that sustained her sense of mission when her sense of efficacy was threatened by her isolation and the many tasks she had assumed.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Mitchell, Scott, and Covrig, 2000 Cultural Diversity and the Teacher Labor Market: A Literature Review	This report is a systematic review of the teacher labor market and the occupational characteristics of the teaching profession with the intention of developing systematic strategies for increasing the diversity of the teaching workforce in California. Using labor market segmentation theory as a framework, the investigators observed how individuals with various demographic and social characteristics have very different experiences when they enter the education labor market, particularly when these individuals are not representative of the total work-force or the student population being served. Mitchell et al. explored the task structure of teachers' work and the organizational structure of schools.	There is a wide disparity between the ethnic and racial characteristics of California's student population (increasingly minority) and the teaching force (overwhelmingly white). Analysis of the demographics of the teacher preparation pipeline points to minority attrition at every step in the process from high school graduation to entry into teaching, as well as retention once in the classroom. The researchers concluded that persistent tensions among the cultural and personal backgrounds of teachers, the task structures required for excellence in teaching, and the occupational structures required of complex public institutions limit both the quality and diversity of the teaching workforce. Policy and program recommendations were provided for ways to encourage cultural diversity within the teaching workforce while at the same time enhancing teachers' professional competence and strengthening school organizations.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Quartz and the Teacher Education Program (TEP) Research Group, 2003 Too Angry to Leave: Supporting New Teachers' Commitment to Transform Urban Schools	Descriptive case study of an intensive two-year program leading to state certification and a masters' degree. It was designed to curb urban teacher attrition through a nontraditional social justice approach to urban teacher education, induction, and ongoing professional development. N=307 (94% of 326 teachers who graduated from the program between 1997 and 2000)	The student population was highly diverse—only 41% white—and high performing. Researchers conducted in-depth phone interviews with the 233 teachers who graduated between 1997 and 1999, and used an electronic survey in 2000 to follow graduates. Response rates were 64% in 2000 and 52% in 2001. Retention statistics indicated that graduates stayed in teaching at higher rates than national averages. After five years, 70% of Center X graduates remained in the classroom compared to 61% nationally. In addition, Center X's five-year attrition rate was 29% in contrast with 39% reported by the Department of Education's SASS, as cited in Ingersoll (2001a). Moreover, the 29% attrition rate includes 17% of those graduates who had left the classroom but continued to work in education as school administrators, college professors, Peace Corps teachers, educational technology specialists, and counselors. Future evaluations will control for self-selection bias by constructing an adequate comparison sample from national data as well as survival analyses to examine the characteristics of highly qualified teachers who persist in urban teaching.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Smith and Ingersoll, 2003 Reducing Teacher Turnover: What Are the Components of Effective Induction?	National randomized survey that explores the relationship between the components of teacher induction and retention Data sources: NCES's Schools and Staffing Survey (SASS, 1999-2000) and the Teacher Follow-Up Survey (2000-2001) The study focused on 3,235 first-year teachers out of the 52,000 in the SASS data. Descriptive analysis focused on the incidence of induction, mentoring, and turnover for varying teacher characteristics and school settings. Stage 2 analyses used multinomial logit regression to predict the probability of new teachers' leaving based on configurations of induction supports that they had received. Variables: School characteristics (components of induction programs, school size, urban or rural; private, public, or charter; elementary, middle, or high school, K-12, etc.) and teacher characteristics (race, gender, ethnicity; induction services reported; status in terms of staying in the same school, moving to another, or leaving teaching).	Overall analyses indicated that the proportion of new teachers reporting involvement in a formal induction program increased from 4/10 in 1990-1991 to 6/10 in 1999-2000. Teachers in public schools were more likely to report receiving some form of induction support than teachers in private or charter schools. Small, rural schools and charter schools were less likely to report providing such support. The most commonly reported induction supports reported in public schools were mentoring (70.4%), an induction program (66.9%) or seminar (68.1%), or "supportive communication" from a supervisor (80.6%). Only 29.8% reported having an aide. Charter schools were more likely to support collaboration (61.2%), foster supportive communication (80.4%), or provide an aide (40.3%). Over 29% of the participating first-year teachers moved at the end of their first year or left teaching. The highest rates of leavers were reported from charter schools (24%), particularly urban ones (30%). The rate of leavers was lower in the private schools (26%), but higher in non-Catholic religious schools (36%) and rural schools (42%). Results of the regression analyses indicated that configurations of induction supports had a considerable effect on patterns of teacher retention, mobility, or dropout. The probability of leaving for teachers reporting no support was approximately 19.9% and for teachers reporting a mentor and an induction seminar, 18.4%. *findings continued on next page*

Part II: Question 5		
Study	**Research Tradition Sample Size Variables**	**Findings**
		With a helpful mentor in the same field, common planning time with the mentor, and collaboration with other teachers concerning instruction, the probability of leaving decreased to 11.8% and the probability of transfer to 16%. Adding other services—including more seminars for new teachers and supportive communication with administrators—reduced the probability of leaving to 11.6% and the probability of moving significantly to 11.5%. Only 13% of teachers reported receiving these services. Only 1% reported receiving the whole package of supportive services: all of the above, plus access to an external teacher network and a reduced number of preparations. This combination reduced the probability of leaving to 7% and the probability of transferring to 10.5%.

Part II: Question 5

Study	Research Tradition Sample Size Variables	Findings
Tushnet, Briggs, Elliott, Esch, Havilland, Humphrey, Rayyes, Riehl, and Young, 2002 Final Report of the Independent Evaluation of the Beginning Teacher Support and Assessment Program (BTSA)	The State of California funded a massive and comprehensive evaluation, including documentation of retention rates for BTSA participants across the state of California as well as the kinds and frequency of contact with teachers. They interviewed BTSA program directors by phone and collected program challenges and promising practices as data. They conducted case studies in a sample of 8 out of the 143 local programs that were operating in the fall of 2000. Case studies consisted of site visits with interviews of district and school administrators, teachers (both beginning teachers and support providers), BTSA directors, and other BTSA staff members. Additional data were collected through the study of the Teaching and California's Future Task Force. This process permitted the collection of deeper information about local supply and demand issues and local teacher preparation institutions. Within each district, the evaluation team sampled 3 or 4 schools (2 elementary, one middle, and one high school). Schools were chosen to match the overall demographics of the distict. Within each school, the team interviewed 4 to 10 teachers—2 to 4 new teachers (beginning teachers) and 2 to 4 experienced teachers—across a range of grade levels and subjects. In all, the resulting sample consisted of 7 BTSA programs in 8 districts with *variables continued on next page*	In a brief summary, the evaluators reported the following major findings: Retention in the profession for both first- and second-year teachers was approximately 93% across teaching contexts and program characteristics. During the statewide expansion of the program, the level of services to teachers remained the same or increased. Workplace conditions often posed challenges for program implementation: weak leadership, overcrowded buildings, difficult assignments, extra responsibilities, and poor compensation. Shortages of veteran teachers to serve as mentors posed a problem where teacher turnover was high. Many support providers reported that BTSA was the best professional development they ever had. The evaluators noted that there were no existing methods for adequately capturing and characterizing teacher knowledge.

Part II: Question 5		
Study	**Research Tradition Sample Size Variables**	**Findings**
	18 schools and 134 teachers. Other on-site special service providers were also interviewed. Case study analysis was facilitated by the use of debriefing forms. Teams of interviewers met to discuss the findings within and across cases and develop cross-site themes for each major element of the program. Data were analyzed by strata (program type, school-age population, program expansion category, etc.). The BTSA program grew out of the findings reported by Mitchell et al. (2000) and represented an $87 million commitment by the State of California.	

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