Cultural and Linguistic Diversity and the Special Education Workforce:

A Critical Overview

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The need for special education teachers from culturally and/or linguistically diverse (CLD) backgrounds has become a national concern. The majority of school districts nationwide list the recruitment and retention of teachers from diverse backgrounds as a priority. Many cite difficulties with finding adequate personnel, a problem that is complicated by current special education teacher shortages. The authors of this article synthesize research findings on the current demographics of diverse teachers and the impact on student outcomes. They also summarize qualities of teacher preparation programs that successfully prepare CLD teachers according to the following themes: recruitment, retention, alternative certification, and post–teacher preparation. Recommendations for future research are provided.

The secret of Education lies in respecting the pupil.
—Emerson (1929, p. 990)

Competition in the global marketplace has triggered a push for diversification in the American workforce. Newspapers publicize these efforts with headlines like "Toyota Earmarks $8 Billion for Diversification Efforts" (Barboza, 2003). Media attention has similarly focused on the need for teachers from historically underrepresented groups (Jan, 2003) and the importance of diversity in the classroom. Given that individuals from historically underrepresented groups currently constitute 31% of the nation's population, it seems that employers would have a relatively large pool of potential recruits to draw from and that diversification goals would be fairly easy to attain. Yet, the field of special education continues to struggle with the challenges inherent in recruiting and retaining diverse teachers.

This article summarizes issues of diversification in the special education workforce. Although there are many types of diversity (e.g., race, disability, gender), this overview focuses specifically on race, ethnicity, and culture. In this article we use the terms *students from diverse backgrounds, students from historically underrepresented groups,* and *culturally and/or linguistically diverse (CLD) students* synonymously. Although the term *minority* may be more recognizable by some, the consensus over the last decade is that this term has become objectionable; for some it implies an oppressed status, while others

maintain that, in fact, CLD children make up the majority of the student population in many classrooms, schools, and districts. When referencing specific racial or ethnic groups, the terms used in this article reflect those used in the various reports and studies cited.

A brief historical perspective of changes in the employment of teachers from diverse backgrounds is provided, and the demographics of current special educators and those in the teacher preparation pipeline are identified. Arguments for diversity are discussed, and empirical studies that support or refute those arguments are examined. Strategies for increasing the number of CLD special educators through increased recruitment and retention efforts at colleges and universities and through alternative certification procedures are also discussed. Finally, research questions for future study are provided.

Demographics, Diversity, and Relevant Research

Historically, teaching has been a profession of opportunity for many underrepresented groups. However, the advent of the civil rights movement, the women's movement, and affirmative action during the 1960s and 1970s provided occupational opportunities in fields previously unavailable to people of color and women. While desegregation of public schools during this period was viewed as a positive force for schoolchildren, it

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eliminated jobs for more than 38,000 African American teachers (Hill, Carjuzaa, Aramburo, & Baca, 1993; King, 1993; Michael-Bandele, 1993). As opportunities for African Americans increased in other fields, historically Black colleges and universities (HBCUs), which had produced the largest number of African American teachers, saw sharp declines in teacher education graduates. From 1977 to 1989, percentages of bachelor's degrees in education earned nationwide by African Americans dropped from 22.1% to 7.3%, and by Hispanics, from 16.3% to 7.7% (Michael-Bandele, 1993).

Current special education teacher shortages are substantial: Approximately 44,000 special education positions in the United States are filled by teachers lacking appropriate certification (U.S. Department of Education, 2002). Moreover, the number of special education teachers from CLD backgrounds is small and declining (Olson, 2000). For example, in 1978, 12% of America's teachers were African American; by 1993 that number had declined to 9% (Shipp, 1999). As recently as 1996, over 40% of the nation's schools had no teachers from underrepresented groups on their faculties (Riley, 1998). Today, only 14% of special education classroom teachers are from historically underrepresented groups (Billingsley, 2002), compared to approximately 38% of the students in their classrooms. For some underrepresented groups, the disparity is even greater. African American men constitute only 0.4% of elementary and 2.2% of secondary special education teachers (Nettles & Perna, 1997). Olson (2000) predicted that 40% of students but only 12% of teachers will be from diverse backgrounds by the year 2009. Clearly, the diversity of special education teachers matches neither that of the general population nor the diversity of the students with whom they work.

It initially appears that the field of special education, when compared to other professions, is a leader in diversity. The U.S. Census Bureau (2002) listed the diversity of the nation's physicians, lawyers, and engineers at 10.2%, 8.2%, and 9.0%, respectively. However, when those percentages are calculated into actual professionals, the special education lead is less impressive. The relatively small field of special education has approximately 43,000 CLD professionals, in contrast with the larger fields, where 78,000 physicians, 76,000 lawyers, and 191,000 engineers are CLD individuals. And compared to social work, a field similar to education in many ways (Connelly & Rosenberg, 2003), special education is doing very poorly. Thirty-two percent of all social workers (250,000 individuals) are from diverse backgrounds.

Current data (Harvey, 2002) indicate that the diversification trend will intensify in other fields as colleges produce more diverse graduates, but will stabilize or decline in special education. Individuals from diverse backgrounds earned nearly 22% of all bachelor's degrees awarded in 2000. However, CLD individuals earned only 14.3% of all education degrees that year—a decline of .8%. In contrast, business, social sciences, and engineering all showed increases ranging from 3.2% to 9.1%, with CLD individuals representing approximately 23% of their graduates. The situation is no better within the teacher pipeline (students enrolled in teacher preparation programs). The Council for Exceptional Children (2001) reported an enrollment of only 14% for CLD students in special education teacher preparation programs. The American Association for Employment in Education (AAEE; 1999) reported that 65% of colleges and universities anticipate no change in the number of diverse teacher candidates produced; therefore, an increase in the diversity of the teaching force in the near future is unlikely.

In contrast, the demographics of the children in America's classrooms have become increasingly diverse—evidence of a marked transformation that some predict will persist (Smith-Davis & Billingsley, 1993). Students from diverse backgrounds make up 37.7% of the nation's special education students and 38.0% of all public school students (U.S. Department of Education [USDOE], 2001). While these percentages are nearly identical, one troubling difference is that students from CLD backgrounds are often overrepresented in programs for students with mental retardation and emotional or behavioral disturbances, as well as underrepresented in gifted and talented programs (Artiles, Harry, Reschly, & Chinn, 2002).

Diversity Justifications and the General Consensus

Justifications. The intense push to hire teachers from diverse backgrounds is driven by the belief that diversity is important. There are three common justifications for diversifying the nation's teachers. The first is based on issues of equity and social justice (Ehrenberg, Goldhaber, & Brewer, 1995). Former U.S. Secretary of Education Richard Riley (1998) summarized this in the title of his article, "Our Teachers Should Be Excellent, and They Should Look Like America." Because schools are a microcosm of our civilization, they should reflect the overall makeup of society. American society is diverse and public school students are diverse, and the teaching force should reflect this diversity. Particular attempts should be made to include groups that have historically been marginalized or excluded (Goodwin, 2002; Riley, 1998).

The second rationalization for increasing diversity is specific to the field of special education. The overrepresentation of students from CLD backgrounds in special education has been of concern for decades (Artiles et al., 2002; Chinn & Hughes, 1987; Donovan & Cross, 2002; Dunn, 1968; Patton, 1998). Most referrals for special education come from general education teachers, and because most of these teachers are European American, monolingual, and middle class (Goodwin, 2002), it has been posited that a cultural mismatch between teaching style and learning style is a factor in disproportional placement (Artiles et al., 2002). Many reasonably assume that diverse special education teachers who are aware of these cultural differences would be more likely to recognize and address inappropriate referrals and placements of CLD students.

A third justification for a diverse teaching force is related to the impact on student learning. Dee (2001) reported

that it is now conventional wisdom in education that students from underrepresented groups will succeed academically when paired with teachers who match their race or ethnicity. In the following section, we discuss the justifications for diversity that have achieved general consensus in the literature and make comparisons with actual research results.

General Consensus. For students from underrepresented groups, the benefits of a diverse teaching force are great. A teacher who has a racial or ethnic background similar to a student's, or who speaks the student's language, may have a profound impact on that student's educational comfort level, something that Dee (2001) called a "passive teacher effect" (p. 4). This makes it easier for students to approach a teacher or ask for additional help or support (Dandy, 1998). Teachers from diverse racial backgrounds are role models, enabling students to recognize that their own differences are not liabilities but strengths to be built on (Michael-Bandele, 1993; Villegas & Clewell, 1998).

Teachers who reflect the racial or cultural makeup of a community act as liaisons between that community and the school. These teachers may also function as cultural translators for their students, introducing them to the school's "invisible" culture that is largely based on a White, middle-class perspective (Mitchell, 1998). Conversely, they can also share the experiences and perspectives of students from different communities with school colleagues. CLD teachers often are cultural mediators, activists for student rights, and advocates for student growth and development (Mitchell, 1998). They strengthen the academic foundation on which the schools build by engaging families in the educational process in order to connect students to greater opportunities (Dandy, 1998; Riley, 1998; Villegas & Clewell, 1998). Because limited English proficiency is a key barrier to learning for many students, the presence of personnel who speak the native languages of English language learners in the schools is an obvious necessity (Genzuk & Baca, 1998).

Diversity proponents contend that CLD teachers can increase academic achievement for diverse students (Villegas & Clewell, 1998), thus altering the negative cycle of lowered expectations experienced by many students (Riley, 1998). Researchers have discovered unmistakable differences in cognitive and learning styles among children from various racial and ethnic groups (Au & Kawakami, 1991; Ladson-Billings, 1994; Townsend, 2000; Voltz, 1998). Teachers who use this knowledge to reduce the incongruence between teaching and learning styles create better outcomes for their students.

A final argument is that teachers from diverse backgrounds also enhance the educational experience for European American children (Villegas & Clewell, 1998). Students from all racial groups must be taught by individuals representing a variety of races, cultures, and backgrounds (Riley, 1998). The absence of diverse perspectives makes it harder to modify existing biases and racial attitudes. When students are exposed to educators representing only one race, they are denied access to different viewpoints and prevented from developing the intercultural competence and multicultural communication skills necessary for success in the new millennium (Kea & Utley, 1998; Michael-Bandele, 1993).

Research on Teacher Diversity and Student Impact

In an attempt to substantiate the arguments listed above, research on the impact of teacher diversity on CLD student achievement was reviewed. Keyword searches of electronic databases were conducted, and respected researchers in the field of diversity were contacted. Because of the limited number (2) of empirically based studies, the search was expanded to include studies that investigated race/ethnicity in relation to teacher perceptions and referrals. With the exception of two reports (Dee, 2001; Donovan & Cross, 2002), the studies described here came from articles published in peer-reviewed journals or books. We did not include papers presented at professional conferences, master's theses, dissertations, or reports that are available but still in draft format.

To provide a historical perspective on this issue, we included studies from as far back as the early 1970s. The desegregation of the nation's schools, coupled with the passage of P.L. 94-142, resulted in a group of studies that investigated the impact of race and referral for special education. The timing of these studies also coincided with rising concerns in the field about the overrepresentation of students of color in classes for students with mental retardation. In the end, we included 13 studies from the 1970s and 1980s and 12 that were conducted in the last decade. These empirically based studies fell into three groups: research that analyzed teacher bias, investigations of teacher behavior, and studies that examined actual teacher ratings and referrals.

Teacher Bias. A number of studies conducted in the 1970s and early 1980s examined the impact of race on educators' initial perceptions of students (Aloia, Maxwell, & Aloia, 1981; DeMeis & Turner, 1978; Prieto & Zucker, 1981; Tobias, Cole, Zibrin, & Bodlakova, 1982; Tobias, Zibrin, & Menell, 1983; Zucker & Prieto, 1977). Most used hypothetical case studies that manipulated characteristics such as race, ethnicity, gender, educational label (e.g., educable mentally retarded [EMR]), or the perceived physical attractiveness of the participants, to determine if bias was a factor in initial teacher perceptions or in referral decisions. All of the studies found race to be a significant factor. Zucker and his colleagues (Prieto & Zucker, 1981; Zucker & Prieto, 1977) found that teachers indicated special education placement as more appropriate for Mexican American children than for White children. Aloia et al. (1981) also found that the race of the child significantly influenced teachers' perceptions and that the label of EMR had less negative effect on teachers' perceptions of White children than on those of Black or Mexican American students. DeMeis and Turner (1978) found that Black students, non-

Black students who spoke Black English, and less attractive students were rated lower by their teachers.

Because the participants in the previous studies were all predominantly White teachers, no cross-race comparisons could be made to determine if the perceptions of diverse teachers would be more positive toward CLD students than those of the European American teachers. Tobias and his colleagues (Tobias et al., 1982; Tobias et al., 1983) utilized a diverse teacher participant pool in two subsequent studies. Their 1982 study found that general education teachers were more likely to recommend students from ethnic groups other than their own for referral to special education. Because the majority of the nation's teachers are European American, this lent some credence to the theory that teacher bias leads to overrepresentation in special education. Tobias et al.'s 1983 study found that recommendations for special education referrals were influenced by teacher ethnicity and teaching level: White teachers referred students more frequently than Black or Hispanic teachers, with no significant differences found for student ethnicity, and secondary teachers referred less often than elementary teachers. In addition, both Black and White teachers referred more boys, whereas Hispanic teachers referred more girls.

One limitation in most of the studies was the use of hypothetical case studies (Shinn, Tindal, & Spira, 1987). Teacher perceptions of behavior of actual students could be different from those involving hypothetical students (Bahr, Fuchs, Stecker, & Fuchs, 1991). A second limitation is that most investigators examined suspected bias without controlling for the race of both student and teacher (Bahr et al., 1991). The studies, which showed that bias existed in the perceptions of White teachers, failed to show the reverse effect because teachers from historically underrepresented groups were not included in participant pools.

Teacher Behaviors. Student learning is affected by many teacher behaviors, including questioning techniques and frequency and type of reinforcement. Several studies examined teacher interactions with students from CLD backgrounds (Buriel, 1983; Jackson & Cosca, 1974; Laosa, 1979). Results were contradictory. Jackson and Cosca found that teachers praised, encouraged, and directed questions to Anglo students more than Chicano students, and accepted and used more Anglo student ideas. These results were corroborated by Buriel. However, Jackson and Cosca also found that the disparity between response rates increased for Mexican American teachers. The amount of positive praise and feedback given by Mexican American teachers was 139% higher for Anglo students than for Mexican American students. Laosa found that teachers' disapproving behavior was significantly influenced by the students' dominant language rather than by specific ethnic group.

Methodological problems with these studies were that (a) no Mexican American teachers were included as a comparison group (Buriel, 1983); (b) a vague definition of "teacher" included classroom aide, parent volunteer, and cross-age tutor (Laosa, 1979); and (c) teacher interactions were coded at the classroom level rather than at the student level (Jackson & Cosca, 1974). The design of these studies does not make it possible to draw any conclusions regarding the effectiveness of CLD teachers with CLD students.

Actual Teacher Ratings. Studies in the 1980s examined more realistic situations to discern teacher bias, often combining several sources of data collection (e.g., teacher data and academic achievement). In a study of teachers and reading groupings, Haller (1985) failed to uncover evidence of racial bias, either conscious or unconscious, even though Black students were more likely to be placed in the lowest reading groups. Shinn et al. (1987) conducted curriculum-based assessment (CBA) on students referred due to reading difficulties. Significantly more boys and Black students were referred, leading to the conclusion that teacher referrals were biased. However, the referred students performed significantly lower on CBA measures than the normed population at their schools, lending validity to the teacher referrals. Keller (1988) investigated ratings of adaptive behavior and found differences by ethnic group: Teachers scored White students higher than Hispanic or Black students. Parent and teacher ratings were not highly correlated, confirming the need for multiple sources of information in referral decisions. Elliott, Barnard, and Gresham (1989) corroborated these findings in a study of teacher ratings of social behaviors for preschool children, in which both parents and teachers gave Black students lower ratings than White students on the *Social Skills Rating System* (SSRS; Gresham & Elliott, 1990). Correlations between parent and teacher ratings were moderately low, reinforcing the notion that ratings from two adult samples provided unique information about the social behavior of the child.

Although more methodologically sound than earlier research, these studies still failed to compare White teacher ratings to those of CLD teachers. The hypothesis that greater numbers of CLD students would avoid referral to special education for either academic or adaptive behavior concerns if there were more CLD teachers cannot be confirmed by the research discussed above.

Research in the Last Decade

Research methodology has improved significantly during the last decade. Researchers not only measured several variables to determine the presence of bias but also examined similarities and differences between teacher racial groups. In addition to studies of referral rates, researchers began to assess the impact of teacher race on student academic performance, in particular, the effects that teachers from underrepresented backgrounds have on students and families from both similar and different racial and ethnic backgrounds. No studies were conducted specifically on special education teachers and students; most focused on general educators and their referral rates and patterns. Twelve studies are described here.

Research in the area of teacher perceptions found that teachers were more likely to rate students with African American movement styles as lower in achievement, higher in aggression, and more likely to require special education services than students with standard movement styles (Neal, McCray, Webb-Johnson, & Bridgest, 2003). It is interesting that these negative perceptions were based solely on movement style and not race, as European American students in the study who displayed the African American movement styles were rated even lower than the African American students. Additional research (Casteel, 1998) found that African American students experienced more negative interactions with teachers and received less praise, positive feedback, and clues for answering questions than their Caucasian peers. Similar to the earlier studies, CLD teachers represented a very small proportion of the participants (Neal et al., 2003), or were completely absent (Casteel, 1998).

Teacher Referrals. Increased awareness of overrepresentation issues in classes for students with mental retardation resulted in several studies of academic referrals for CLD students. Bahr et al. (1991) found that both Black and White teachers rated Black students as significantly more appropriate for referral to special education than White students. Furthermore, the data suggested that the higher rate of "appropriate for referral" ratings was due to significantly poorer academic achievement (substantiated by *Woodcock Reading Mastery Test* scores). MacMillan, Gresham, Lopez, and Bocian (1996) monitored children nominated to Student Study Teams (SST) for prereferral interventions. Their results did not reveal a significant interaction between ethnicity and any of the dependent variables. Referred Black and Hispanic students performed significantly lower in reading than referred White students. The authors noted that teachers may be hesitant to refer Black and Hispanic students due to increased sensitivity to multicultural issues, so students must exhibit substantially lower academic skills in order to be referred. However, the ethnicities of the referring teacher and students were not matched. Andrews, Wisniewski, and Mulick (1997) found that African Americans had significantly higher referral rates than Caucasians. An interesting finding was that students who were taller or heavier than average were also referred at significantly higher rates, lending credence to the authors' argument that teachers cannot be used as "valid tests" of students' academic achievement. A meta-analysis of 10 studies (Hosp & Reschly, in press) that examined referral rates for intervention or assessment found a significant discrepancy between African American and Caucasian students in analysis of the overall effect, with similar referral rates being found for Hispanic and Caucasian students. Because most of the effect sizes used were derived from one specific analysis, the authors noted that a larger and more diverse set of studies would be required to make appropriate comparisons if other factors accounted for some of the variability. Conversely, in an ethnographic study of disproportionality and placement issues, Harry, Klingner,

Sturges, and Moore (2002) found that the greatest bias in CLD student outcomes was institutional in nature, a result of "soft" practices (as opposed to "hard" data) involving many discrete decisions by school personnel. Decisions were affected by factors such as the teacher's impression of the family and external pressures for identification and placement, and personnel found ways to qualify children for special services even when those services were not warranted. The procedures employed were particularly loaded against children from poor and nontraditional families.

Research findings on teacher ratings of student behavior were similarly discrepant. MacMillan et al. (1996) found that teachers rated Black students significantly higher in both conduct problems and hyperactivity. Yet Bahr et al. (1991) found that teacher ratings of student behavior did not yield differences between racial groups. Classroom observations confirmed that target behaviors of difficult-to-teach students were equally discrepant from those of their nonreferred classmates. Powless and Elliott (1993) found that teachers and parents rated Native American students lower in all social skills areas except interfering behaviors. Low correlations between the White parent and teacher ratings but moderate agreement between Native American parent and teacher ratings reflected the impact of cultural commonalities and shared values. Additionally, the social skills rated were not necessarily skills valued or used in the Native American community. Feng and Cartledge (1996) showed similar findings in their study of SSRS-T and SSRS-S ratings of Asian American, African American, and European American fifth graders. The most significant differences were between Asian American and African American teacher and student ratings. It is interesting to note that although they were rated higher by their peers than their European American classmates, African American students gave themselves the lowest ratings of the three groups. Feng and Cartledge hypothesized that the students' low self-reports reflected their classroom comfort levels. One final report reviewed was the much-discussed National Academy of Sciences report (Donovan & Cross, 2002): After a comprehensive review of studies investigating the referral of historically underrepresented populations of students, Donovan and Cross stated, "There is no evidence to support the idea that some of the children referred to special education are normal achievers who have no classroom learning or behavior problems" (p. 6-17).

Teacher Race and Student Outcomes. Although a plethora of subjective writings can be found on the importance of diversity, surprisingly few studies have attempted to show direct correlations between student–teacher racial pairings and academic outcomes. Ehrenberg et al. (1995) analyzed data from the National Educational Longitudinal Study (NELS) to determine the impact of teachers' race, gender, and ethnicity on student outcomes. The researchers concluded that, overall, these factors did not play an important role in student academic gains. However, a few statistically significant relationships

were found. In comparison to White male teachers, Black male teachers were associated with higher gain scores in history for Black and White male and White female students, but lower reading scores for Hispanic male students. Black female teachers were associated with lower reading and history gain scores for Hispanic male students but with higher science gain scores for Hispanic females. Additionally, teachers' race, gender, and ethnicity were significant determinants of teachers' subjective evaluations of students (e.g., student as hard worker). For example, Black male teachers gave higher subjective evaluations to Black male students in science and reading and to Black female students in math and science than did White male teachers; Hispanic male and female teachers gave higher subjective evaluations than White male teachers to male and female Hispanic math students.

In another study on student outcomes, Dee (2001) evaluated student test score data from the Tennessee Project STAR class-size experiment. Extant data on 11,600 students were analyzed to investigate the effects of teacher and student race on student achievement. Dee found that a 1-year assignment to a teacher of the same race significantly increased both math and reading achievement for Black and White students.

In summary, there seems to be consensus among researchers that significantly higher proportions of CLD students are perceived by teachers as needing additional support or referral to special education. However, researchers also concur that these students have substantially lower academic functioning than their peers (a topic to be discussed later in this article), which could account for the higher referral rates. Teacher ratings of behavior also vary by racial group, with the ratings of CLD students being lower than those of their European American peers. The only two studies to investigate the impact of teacher race on student outcomes had conflicting results.

Convergence of Diversity Discourse and Research

In the following section we compare the justifications for diversity that were proposed earlier with the subsequent evidence provided by research. A brief discussion is included.

Reasons of Equity. The arguments for diversity based on issues of equity and social justice are that it is "the right thing to do," that formerly excluded groups should be included, and that teachers should reflect the diversity of their students. Although this topic is not easily addressed empirically, questions are posed here that may be answered in the future. What level of diversity is considered appropriate? Should teachers reflect the national, regional, state, or local diversity proportions? It is easier for teachers in urban areas to reflect the diversity of the local community as well as the nation; however, not all communities are so diverse. For example, is it problematic for students in an all-White community in a rural area to have all European American teachers? Is it appropriate for students

from the Navajo Nation to have all Navajo teachers? What if a small, rural, White community decided to diversify 30% of its teaching staff to match the national demographics, but that meant it would have to find seven CLD teachers willing to move to that community? Would these teachers experience social isolation? Issues of intercultural communication and cultural competence would surely need to be addressed for teachers, students, and the community as a whole. Some would say that the diversity of the teaching force should mirror the community's and that a diverse teaching force would not be necessary in the latter scenario. While we acknowledge that "exactly proportional representation may be neither possible nor desirable" (Craft, 1996, p.4), we would also assert that the White students in this community would be deprived of intercultural experiences, impairing their ability to function successfully in future diverse communities and workplaces.

Reduction of Disproportionality. Proponents of diversity argue that a more diverse teaching force could reduce the disproportionality of CLD students in special education. Research results in this area are inconclusive. Although research has shown that CLD students are overrepresented in both referrals and placements in particular disability categories, the research also consistently shows that these referred students have significantly lower academic skills. However, it must not be assumed that low academic achievement necessarily correlates with disability, and further attention to the underachievement of CLD students is warranted. The research shows that White teacher ratings of adaptive behavior vary across racial/ethnic student groups, with lower ratings given to CLD children. Teacher ratings also show low correlations with parent ratings, reinforcing the need to consider multiple sources of information, particularly when parent ratings indicate that the behaviors being rated are not highly valued in the home culture. Furthermore, although the role of the CLD teacher as a community liaison has been consistently included in the literature as a benefit of diversity, Harry, Allen, and McLaughlin (1995) found that although CLD teachers expressed sympathy and concern for the families of their students, they put forth little effort to increase their involvement in or understanding of the special education process. Harry et al. (2002) discovered that perceptions of CLD families were often based on factors such as family history or negative assumptions, regardless of the teachers' ethnicity. Finally, research on the perceptions of CLD teachers and their rates of referral for CLD students is almost nonexistent. Further assessment of referrals of CLD teachers is warranted, to evaluate any subsequent effects on disproportionality.

Increased Student Achievement. Although many argue that CLD teachers improve learning for CLD students, the findings in this area are mixed. Studies of teacher classroom behaviors show definite bias in interactions with CLD students, yet findings of own-race teacher and student outcomes are contradictory. Specific teacher behaviors (e.g., positive rein-

forcement, questioning techniques) have been shown to lead to better student outcomes, and we assume that the absence of these behaviors has a deleterious effect on student learning. There is ample evidence that European American teachers in general education have markedly different teaching and interactional styles when working with CLD students, yet there are no comparison data in those same studies to show that the teaching of CLD teachers is any different.

There is a need for research designed specifically to address questions of teacher race and student outcomes. Quantitative data are necessary to provide definitive answers to student achievement questions, but qualitative data are also necessary to determine if many of the widely publicized passive effects of a diverse teaching force (e.g., increased student comfort levels, availability of role models) are concrete. All of the studies on own-race teachers and students have focused on general education teachers and students. There are no empirical studies that assess the impact of CLD teachers on students in special education. Specifically designed research is needed to (a) determine the effects of teacher race on behavioral and academic outcomes, (b) evaluate effects on students with disabilities from all races, and (c) separate the impact of teacher race from culturally relevant instructional practices.

Special Education Teacher Preparation Programs

> A teacher affects eternity; he can never tell where his influence stops.—Adams (1907, p. 280)

This section of the article synthesizes literature on the training of CLD preservice students. The review primarily contains information from program descriptions of federally and privately funded projects whose goal was to support students from diverse backgrounds in general or special education teacher training (e.g., Dandy, 1998; Fenwick, 2001). Challenges that reduce the number of people from historically underrepresented groups entering the teaching workforce are discussed first, followed by recruitment and retention strategies, alternative certification, and teacher attrition. The article concludes with future research suggestions.

Higher Education and the Special Education Workforce

Poverty, poor academic preparation, and poor performance on college entrance exams present major setbacks for students from diverse backgrounds who have the desire to pursue a postsecondary education. Low-income neighborhoods are disproportionally populated with families from historically underrepresented groups—an issue of social justice and equity that cannot be discussed within the limits of this article. Yet the results of this inequitable situation affect educational results.

Obstacles. For many children, living in poverty adversely affects their education, precludes entry into academia, and subsequently limits the pool of ethnic and racial students in higher education (Hill et al., 1993). Although college enrollments and graduation rates for CLD students have increased over the last decade, this population's representation in institutions of higher education still remains below the percentage of the general population (Harvey, 2002; Nettles & Perna, 1997). The nation's most needy communities—those with high rates of poverty and often from underrepresented groups—suffer the most from shortages of qualified teachers. Disadvantaged rural school districts find it difficult to attract and retain qualified teachers (U.S. Department of Education, 1996). High-poverty communities often hire teachers with minimal qualifications (Artiles et al., 2002; National Commission on Teaching and America's Future, 2003; Riley, 1998). Students from high-poverty areas are frequently assigned to low-level, non–college preparatory courses and are overrepresented in special education classes (Garcia, 2001; Hill et al., 1993). The cycle of poverty and its debilitating effects, therefore, are perpetuated when educational expectations of the student are kept low (Baca & Cervantes, 1989; Michael-Bandele, 1993). For many low-income CLD students, attending institutions of higher education is not an option available to them.

For CLD students who have college aspirations, entrance exam requirements can be a challenge. These students often perform poorly in comparison to their majority peers. The same challenges arise for admission to graduate programs, often due to low GRE scores. African Americans are denied admission to graduate school at higher rates (20%) than Whites (11.5%; Nettles & Perna, 1997). Consequently, colleges and universities are initiating alternative entry requirements, such as providing full-time tuition to all graduating high school CLD students with teaching aspirations who hold at least a 2.0 grade point average; "fresh start" admissions policies for nontraditional, returning students, which drop low grades from the first 2 years of their initial college careers; and the complete elimination of test requirements (Fenwick, 2001). Data indicate a larger applicant pool after eliminating SAT requirements (Trombley, 2004); students who chose not to submit SAT scores maintained an academic survival rate of 92% to 99% (Shabazz, 1995). Researchers, however, from the National Commission on Teaching and America's Future (2003) urge teacher training programs to maintain strong assessment-based selection criteria for preservice teacher candidates in order to increase teacher quality. While it is well-intentioned, strict adherence to this recommendation could result in lowering the numbers of CLD students entering the program.

For students who overcome educational obstacles to success, other factors affect their career selection. While salary has been shown to deter CLD individuals from entering the field (Ford et al., 1997), *prestige* also affects the teacher pipeline (Gordon, 1994). Students from culturally and linguistically diverse backgrounds experience strong resistance from family members and friends, reporting that relatives expect

college-bound family members to engage in more lucrative and prestigious careers (Su, 1996). A lack of financial assistance can also deter poor students from historically underrepresented groups—who are often aggressively recruited by other disciplines and offered greater financial incentives (Dilworth, 1990; Ford, Grantham, & Harris, 1997)—from entering the teaching profession (Su, 1996). During the last 10 years, the field of business has seen a 67% increase in the number of bachelor's degrees awarded to minorities, with even greater gains in the fields of health (100%) and biological and life sciences (126%; Harvey, 2002).

Upon graduation, certification exams come into play. According to Michael-Bandele (1993), teacher testing results from 19 states estimate that examinations such as the *National Teachers Examination* (NTE) and the *Pre-Professional Skills Test* (PPST) have eliminated at least 37,717 prospective CLD teachers. In Louisiana, the pass rate for prospective African American teachers is 15%; for White teachers it is 78%. In Georgia, 87% of White prospective teachers pass the exam; 34% of the Black graduates pass. It is reasonable to suspect that many CLD students interested in the teaching profession are deterred because of this high failure rate (Michael-Bandele, 1993).

Community Colleges and Issues of Choice. About half of all ethnically diverse students who continue on to higher education do so within the parameters of community colleges (Fry, 2002). Often, students from diverse backgrounds elect to attend community colleges in order to keep part-time jobs and live at home (Garcia, 2001). These programs may be more appealing to CLD students because they are less expensive, admissions standards are more attainable, and the larger numbers of same-race and ethnic groups provide a more supportive atmosphere (Hill et al., 1993). Only half of these students transfer to 4-year institutions and receive baccalaureate degrees.

It is doubtful that many CLD students take full advantage of the postsecondary choices available, for a variety of reasons (The Institute for Higher Education Policy, 2002). Hossler and Gallagher's (as cited in The Institute for Higher Education Policy [TIHHP], 2002) three-stage model of choice is used by most students prior to entering higher education. During the *predisposition stage* (Grades 7–9), students begin to review postsecondary opportunities and form college aspirations. The *search and application stage* typically occurs in Grades 10 through 12, when students search for information and create a list of institutions to which to apply. During Grades 11 and 12, students enter the *choice stage,* wherein they make their final college selection. (Paulsen, 1990). But when families from lower income backgrounds face daily challenges involving food, shelter, and safety, long-term goals that include college attendance and subsequent careers seem unrealistic (Gordon, 1994). These parents must expend their energy on imminent survival needs. Many CLD families are unfamiliar with the process involved in selecting an appropriate institute of higher education, so even students with high academic achievement are less likely to take the essential steps required for enrollment in postsecondary education (TIHHP, 2002). Therefore, these students must rely on sources outside the family for information on higher education (Garcia, 2001). Thus, their decisions often are not really based on a list of opportunities but, rather, are based on the only option of which they are aware.

Recruitment Strategies

As stated earlier, students from low-income backgrounds often face academic challenges that prevent them from pursuing higher education. To get students from diverse backgrounds into special education teacher preparation programs, effective recruitment efforts are important.

Faculty have documented that the best method for recruiting students from diverse backgrounds into special education programs is by word of mouth, often with the help of colleagues and other professionals (Guillory, 2000; Wright-Harp & Muñoz, 2000). Other effective recruiting methods include using CLD students within existing programs as recruiters (Dillard, 1994); producing media campaigns directed at students from specific geographic areas and specific groups (Whitworth, 2000); publishing success stories highlighting CLD graduates as part of recruitment literature (Alliance Project, 1998); and using professional recruitment videos, brochures, and posters. College credit courses have been offered to high school seniors as a means of piquing an initial interest in college attendance. High school student members from Future Teachers clubs serve as tutors in elementary programs, to encourage an interest in the teaching profession (Fenwick, 2001). Other recruitment means include (a) providing passes to college activities and resources, such as on-campus computer lab usage and student union access; (b) extending invitations to students enrolled in 2-year institutions for organized activities on 4-year campuses (Alliance Project, 1998; Wright-Harp & Muñoz, 2000); (c) sharing special invitations to college sports and cultural events; (d) fostering awareness of campus organizations that promote and support CLD students (e.g., Black Student Alliance, Chinese Student Friendship Association, etc.); and (e) showcasing curricula that reflect diversity (Alliance Project, 1998; Guillory, 2000; Villegas & Clewell, 1998; Whitworth, 2000). Residential summer programs have been used successfully to recruit students early, prepare 11th- and 12th-grade students for college success, and introduce students to college teacher education programs (Fenwick, 2001).

Retention Strategies

Many CLD students are the first from their families to attend college and are unfamiliar with strategies for success in that setting. To keep students in the teacher preparation programs, effective retention strategies are critical. Retention methods used by IHEs across the nation are discussed next.

Academic Support. Support for setting and attaining goals during academic preparation is key (Sileo, 2000). Pro-

gram components used to promote success in special education teaching programs include study skills seminars, student advising and tutorial programs, student monitoring, special labs, and study and test-taking workshops (Armstrong, James, & Stallings, 1995; Dandy, 1998; Francis, Kelly, & Bell, 1993; Good, Halpin, & Halpin, 2000; Trent & Artiles, 1998; Villegas & Clewell, 1998; Wright-Harp & Muñoz, 2000). Other instructional activities, such as learning journals (Dillard, 1994), videotapes of peer-assisted reflections, service learning activities, role plays, opinion maps, story-boarding, concept-mapping, and cooperative learning activities (Sileo, 2000), have proven effectiveness as well. College-outcomes data suggest that when students learn through multiple formats (e.g., interactions with peers and faculty, time in the library, and writing), they are more likely to exhibit gains in multiple areas. To meet the needs of nontraditional students, course offerings have been restructured, expanded, and offered as weekly seminars and/or evening or weekend modules, often located at local school district sites. Some programs have included "brown bag sessions" as supplemental classes that are relevant to the course curriculum (Wright-Harp & Muñoz, 2000).

When English is the student's second language, assessment of reading, writing, and English language proficiency skills supplies helpful information for programs that provide reading and writing support. Outcomes are increased when the programs incorporate low student-to-teacher ratios and group counseling (Francis et al., 1993). Because of the differences in test-taking processes among diverse learners, explicit instruction in test-taking skills and the use of alternative methods of instruction have been used to increase student recruitment and retention in the educational pipeline. Such courses provide practice with test taking, associative learning, and problem solving (McPhail, 1981) and have also been used to help teachers prepare for national and state certification examinations.

The National Commission on Teaching and America's Future (2003) emphasized the importance of technology practice and instruction to ensure quality in teacher preparation programs. Increased use of technology, both within course content and for alternative methods of assessment, contributes to the retention of diverse students in special education programs (Guillory, 2000; Sileo, 2000). Online courses, in which faculty expertise and peer input are available through online discussions (NCTAF, 2003), and distance-learning technologies are beneficial for CLD students living in remote areas.

Cultural Sensitivity. Campus climate and classroom environment affect subject-matter mastery and goal attainment. Programs should not only include information on culturally and linguistically sensitive instructional strategies and assessments for children with disabilities (Dillard, 1994; Francis et al., 1993; Sileo, 2000) but also incorporate culturally sensitive instruction to enhance the learning outcomes of the CLD students in the teacher training program (Dillard, 1994). College texts should include politically correct language, portray positive images of diverse cultural groups, and acknowledge these groups' contributions to society (Sileo, 2000). Materials should be free of bias and the "invisibility" of historically underrepresented groups, and avoid stereotypes and linguistic bias (e.g., using only masculine pronouns or European American names; Hunt & Marshall, 1994). Course assignments in preservice special education training programs that are directed toward understanding the influence of culture on learning are beneficial and facilitate internal cognition about one's own style of learning (Harry, Torguson, Katkavich, & Guerrero, 1993).

Funding. Cost is a limiting factor in the recruitment and retention of diverse individuals into the special education teaching field. To alleviate the financial challenges of a college education, financial support such as fellowships, stipends, and grants (often funded by the Office of Special Education Programs, or OSEP) is sought by faculty members to provide tuition assistance for students. OSEP recently created service obligation provisions that require students who receive federal assistance to work 2 years within the field of special education for every year of tuition received during the course of study. No data have yet been reported on the impact this will have on the recruitment and retention of students from diverse backgrounds.

Unexpected emergencies or certain family situations can place undue hardships on students. Some programs have created contingency or emergency funds to assist their CLD students. Funds are disbursed at the discretion of the project directors and have prevented the derailment of students' education due to financial circumstances (Fenwick, 2001).

An array of professional experiences throughout preservice programs provide important training and support for the student and are a crucial component of high-quality teacher training programs. However, many students enrolled in these programs cannot afford to forfeit salaries and benefits for an extended period of time, specifically during the student teaching period, which can last up to 16 weeks. Some programs permit students to complete student teaching requirements as paid interns or paid student teachers, allowing them to maintain income and benefits such as health insurance. Andrews, Miller, Evans, and Smith (2003) reported on an innovative program that offers interns on-the-job training while allowing them to earn a full salary.

Interpersonal Support

Students from underrepresented backgrounds may experience feelings of unease or concern that are foreign to their classmates from the predominant culture, particularly on campuses where the majority of the student population is European American. Programs that provide interpersonal supports can address these issues and alleviate the concerns.

Faculty. Diverse faculty provide students with diverse educational experiences (Sileo, 2000). Blackwell (1984) re-

ported that the most persistent and statistically significant predictor of enrollment and graduation by Black students is the presence of Black faculty. The presence of CLD faculty has many benefits, including the potential to increase research in the education field about diverse students, increase the number of diverse scholars in the field, have a significant impact on policy and programs that enhance the achievement of CLD students, as well as validate the school systems' own commitment to diversify (Frierson, 1991). Increasing diversity among faculty has remained a top priority for most colleges and universities.

Mentors. Related to the issue of CLD faculty is the associated impact of mentors. Numerous universities and colleges have instituted mentorship programs (Fenwick, 2001). Specific activities that support student learning through collaboration with a faculty member include (a) presentations during professional conferences, (b) participation on planning committees for professional workshops, (c) participation in career seminars or training workshops, (d) resume preparation, and (e) practice in interviewing skills (Dillard, 1994; Guillory, 2000; McCarty & Gallegos, 2000). These activities provide opportunities for students to expand their individual interests and ideas under the tutelage of a mentor professor (Guillory, 2000; Wright-Harp & Muñoz, 2000). Faculty mentors also monitor students with low grades to identify steps for improvement (Armstrong et al., 1995; Dandy, 1998) and provide counseling when factors from students' personal lives affect their progress in the educational program (Wright-Harp & Muñoz, 2000).

Current research provides little information regarding the instructional components that should be included in a mentoring program, what type of assistance is needed, and what the content of that assistance should include (Huling-Austin, 1986; Little, 1990). However, preservice special education programs can build on the work of other fields. Good and her colleagues (2000) studied the academic and interpersonal gains experienced by upper class mentors in an engineering program for CLD students. The mentors tutored, advised mentees about problems related to their courses of study, participated in study sessions, and interacted in social events. The mentors were required to keep journals to record their own personal and academic development. The mentoring provided academic assistance to the mentees but also resulted in unintentional academic benefits for the mentors in the form of increased GPAs and retention rates.

Veteran or retired teachers can also serve as mentors and volunteer to work with preservice teachers in training. Mentors from the Pathways project act as career coaches and provide assistance with school-related and personal concerns. For many students in the Pathways program, mentors are the most vital link of support (Fenwick, 2001).

Cohort and Family Support. An often-cited retention element is the use of student cohorts, who proceed through special education programs together and develop close relationships (Alliance Project, 1998; Dillard, 1994; Fenwick, 2001; Monteith, 2000; Trent & Artiles, 1998). Informal interactions with peers are associated with gains in personal and social development and contribute to increases in general intellectual skills (MacKay & Kuh, 1994). An example of such a support system is the Partners in Context and Community Project at Green State University. This program has innovatively reserved a residence hall for preservice students, with selected faculty offices located in the building for better access to faculty mentors. The residence hall provides space for special activities, events, and programs for preservice students to learn outside the traditional classroom and gives students opportunities to interact more often with one another outside of class.

Some programs have sponsored social hours, picnics, and other gatherings that teach students and their families about academic programs and how to cope with college stressors. This is helpful for adult learners who find it difficult to complete their coursework without sufficient understanding and support from their spouses and other family members (Fenwick, 2001). Formal orientation sessions held several times a year help students, spouses, and family members understand the importance of increasing the diversity of the teaching workforce and the rigors and requirements of college study (Dillard, 1994; Fenwick, 2001).

Multisystems Support

Studies have indicated that institutional characteristics influence college success, including the type of institution (majority or minority institute of higher education) and, correspondingly, the previous amount of exposure to the majority culture experience by the students in a particular institution. In a study by Bohr, Pascarella, Nora, and Terenzini (1995), African American students who attended predominantly White institutions of higher education experienced significantly greater levels of social isolation, personal dissatisfaction, and alienation than did their African American counterparts at HBCUs. Adan and Felner (1995) found that for African American students who attended a predominantly Black university, less prior exposure to Whites and greater enmeshment in the African American community was associated with better adjustment to college. In contrast, however, for African American students attending predominantly White universities, more interracial experiences were associated with better adjustment to college.

HBCUs have traditionally provided a postsecondary education to African American and other students from diverse backgrounds who displayed nontraditional profiles of college students. Their graduates have successfully assumed professional responsibilities in the educational community (Fenwick, 2001). The federal government classifies institutions of higher education where at least 25% of the student population are of Hispanic/Latino, African American, American Indian, and Asian/Pacific Island descent as HBCUs and other minor-

ity institutions (OMIs). During the last 12 years, OMIs have increasingly pursued funding for student support and now receive 25% of all funding for special education personnel preparation training programs provided by OSEP (Smith & Yzquierdo, 2002). These schools emphasize efforts to recruit and retain students from diverse backgrounds and play an important role in producing teachers for special education classrooms in both rural/remote and urban/inner city schools (Office of Special Education Programs, 2000).

Collaboration among teacher training programs at colleges and universities and school districts has resulted in successful preparation for future CLD teachers. Cross-registration between university programs enhances coursework by providing an expanded range of course offerings to students (Fenwick, 2001), particularly for smaller institutions with few faculty. In some cases of collaboration, the majority of the teacher preparation program is conducted on site in local schools (NCTAF, 2003), making it easier for paraprofessionals and noncertified personnel to receive the necessary coursework. School districts view university collaboration positively, as it provides professional development and career ascension opportunities for staff, decreases critical teacher shortages, and diversifies the teacher workforce while providing better preparation of preservice teachers about the realities of contemporary K–12 teaching (Fenwick, 2001). Students benefit from university/school district partnerships, as they are encouraged to investigate critical education issues by visiting schools and talking with teachers, school administrators, and education policymakers while exploring different career paths in education. Successful collaboration depends on strong commitment from senior campus administrators to include policies that compensate faculty through promotion and tenure for collaborative work with K–12 programs (NCTAF, 2003).

Alternative Certification

Alternative certification (AC) programs are a fast-growing alternative to traditional teacher preparation programs, and they appear to be successful in producing teachers from underrepresented groups. Opponents argue that in the quest to eliminate emergency certificates, AC programs allow individuals with little or no preparation to become teachers. In contrast, others view alternative certification as a means for qualified and motivated individuals to obtain a teaching certificate without the lengthy process required to earn a traditional teaching degree. According to the National Center for Education Information, AC teachers represent about 10% of all newly certified teachers and 2% of the entire teacher labor force. Currently, approximately 7.3% of special education teachers were certified in AC programs (SPeNSE, 2002).

One of the most challenging aspects of studying and understanding AC is the lack of a generally accepted definition. Although Rosenberg and Sindelar (2001) acknowledged the difficulties in defining critical features of AC programs due to disparities among state programs, AC can be defined via comparisons with traditional teaching programs. The three major areas of differences are the length and structure of the program, delivery mode, and candidate population (for a detailed explanation of these areas, see Rosenberg & Sindelar, 2001). The literature reveals that "alternative" can refer to the program of study itself, the recruitment components, or the rate and mode of accomplishing the program. Darling-Hammond (1990) referred to programs with reduced standards as "alternative certification" and programs that hold candidates to the same standards as those in institutions of higher education as "alternative routes." Typically, candidates for AC do not have a background in education but hold a bachelor's degree in another field; they may be older and have experience in business or industry (Rosenberg & Rock, 1994). Some AC candidates may have experiences in the education setting (e.g., paraprofessionals) but no undergraduate degree (Villegas & Clewell, 1998). Alternative certification programs tend to be shorter and provide more field-based experiences, sometimes in lieu of a portion of the traditional coursework. Typically, the interns assume full responsibility of a classroom before program completion.

Because of the lack of consistency in definitions, research on alternative certification is problematic. Zeichner and Schulte (2001) noted that a great deal of confusion has been generated, particularly because of the nature of the available research. In a recent review, Zeichner and Schulte found only 21 peer-reviewed publications regarding AC. The majority of available literature on AC are reports, usually completed by local agencies or in response to internally administered surveys, which raises issues of reliability and validity. Due to the lack of studies of AC programs in special education, the literature cited here deals with AC programs in general education.

Diversity and AC Programs. One of the most encouraging features of AC programs is the apparent success in recruiting (Feistritzer, 1994; Zumwalt, 1991) and certifying significantly larger percentages of CLD candidates (Shen, 1998). Zeichner and Schulte (2001) estimated that 124,000 individuals were certified to teach through AC programs sponsored by states and school districts between 1983 and 1999. It has been estimated that about 40% of alternately certified teachers are from CLD backgrounds (Appel, 1995). Factors including the location of the programs (i.e., many in inner cities) and provision of financial aid affect the diversity of the candidates (Kirby, Darling-Hammond, & Hudson, 1989).

Several studies of urban school districts have reported success in recruiting and certifying CLD candidates via AC programs. Most of the programs studied are in large, urban centers where there are extreme shortages of certified teachers. These urban centers are also typically populated by a proportionately higher number of CLD potential candidates. Thus, the pool from which AC programs recruit to a large extent ensure or determine the level of CLD participation. For example, Cornett (1990) reported that Texas certified more than 16% of its new teachers through AC programs. The Texas Education Agency reported that, in 1990, AC programs were the

primary means of attracting CLD professionals into teaching. Cornett (1990) also found that CLD candidates in Texas from AC programs have higher passing rates on certification tests than those who are certified through traditional programs. In another example, the Los Angeles Unified School District prepares 96% of all the AC teachers in California, which averages about 300 candidates per year. Between 1984 and 1990, almost one third of the teachers recruited through their program were from CLD backgrounds, compared to the 13% from the California State University System (Stoddart, 1990).

In an exemplary study regarding an AC special education program, Rosenberg and Rock (1994) noted that 11 of the 14 participants were from CLD backgrounds. Their project involved the cohort in a 2-year experimental program that included unique recruitment procedures; intensive on-the-job, university-based supervision; and local school mentoring. They reported success in that all 14 participants filled special education positions during the program and signed commitments to continue an additional 2 years in special education classrooms.

Recruitment and Retention in Alternative Certification. In a study completed in the Los Angeles Unified School District, Stoddart (1990) found that 70% of the AC graduates had been educated in city schools, compared with 22% of students in conventional preparation programs. Natriello and Zumwalt (1993) reported that preservice teachers from alternative programs were more likely to prefer and continue to teach in urban settings. Similarly, Stoddart and Floden (1995) concluded that AC teachers not only tended to more often live in urban communities but also were more likely to work in inner cities. This supports the finding (Villegas & Clewell, 1998) that recruiting from an often diverse pool of classroom paraprofessionals and emergency-certified teachers increases the likelihood of remaining in teaching jobs because of close ties to the community. Those who come from other professions are another pool of possible recruits. Kwiatkowski (1998) wrote, "Those who leave their present position and seek teaching through alternative certification do so not as a repulsion from a negative situation, but as a positive attraction to something they consider to be a more worthy occupation" (p. 4). Many do not abandon other careers because of extreme dissatisfaction; rather, their decisions are influenced because they are drawn to teaching.

Although some studies show that AC teachers with CLD backgrounds tend to remain in teaching, research findings on AC teacher retention are mixed. Studies involving Teach for America program participants have shown that most leave the teaching profession (Dial & Stevens, 1993; Wise, 1994). Although Kirby et al. (1989) found that after 2 years, larger portions of AC teachers than those who were conventionally prepared were still teaching, Darling-Hammond (1990) found retention rates of AC candidates to be much lower than those of conventionally prepared teachers. Haberman (1999) reported a 94% retention rate of AC graduates during a 10-year period. Similarly, Paccione, McWhorter, and Richberg (as cited in

SRI International, 2002) compared AC project graduates to graduates of two other traditional programs and found that the AC graduates were more likely to be hired by school districts and remain in teaching. Darling-Hammond found that midcareer recruits working on master's degrees were most likely to stay in teaching (based on interviews with them prior to completing the AC program). Natriello and Zumwalt (1993) showed mixed findings regarding retention that were affected by the subject areas in which the new teachers taught. They found that 85% of both traditionally certified and AC elementary teachers stayed in their positions. In mathematics, more than 80% of the traditionally prepared teachers remained in teaching, compared with 60% of the AC-prepared teachers. Seventy-five percent of the AC English teachers were still teaching, compared with 66% of the traditionally certified English teachers.

It seems apparent that providing special education teachers for some of the nation's most diverse classrooms requires a willingness to serve in urban sectors. This necessitates serious efforts to identify CLD individuals who currently reside in these high-need neighborhoods, particularly AC-trained teachers with urban education experiences (Natriello & Zumwalt, 1993; Stoddart, 1990) and preferences for subsequent employment in urban communities. These individuals need to be trained in certification programs that not only incorporate strong content knowledge and pedagogy but also include a substantial mentoring and induction component.

Quality of AC Programs. Findings on the quality of AC program graduates are inconclusive. Houston, Marshall, and McDavid (1993) examined the perceived problems of beginning teachers (traditionally and alternatively certified), confidence levels, and satisfaction with teaching, with interviews occurring at 2 months and after 8 months of teaching. Although initial results generally favored the traditionally certified teachers, those differences diminished at 8 months. It should be noted that the AC group was significantly more diverse and older than the traditional group. In the Study of Personnel Needs in Special Education (SPeNSE, 2002), telephone interviews were conducted with a nationally representative sample of 358 local administrators and 8,061 service providers, including special education teachers, paraprofessionals, and speech–language pathologists. Teacher quality in this comprehensive study was measured according to a set of factors that have been associated with student achievement (i.e., experience, certification, tested ability, and self-efficacy). Aggregate teacher quality scores were highest for teachers who completed a fifth-year program or received certification through continuing professional development, followed by those earning certification through a master's degree program. Teachers scoring third and then last were those earning certification through a bachelor's degree program and through an alternative route, respectively. Empirical data on the effectiveness of AC programs is forthcoming from SRI International, a nonprofit research institute currently engaged in a large-scale

study to address quality issues in AC. In a comprehensive literature review, the authors of the study noted that indicators such as teacher competence and retention were used to judge the effectiveness of AC programs, and that components such as considerable preservice coursework and supervised internships within a master teacher's classroom were associated with higher program quality (SRI International, 2002).

It is evident from the literature that AC programs are a definite part of the landscape of teacher preparation as well as part of the solution to diversifying the special education workforce (Zeichner & Schulte, 2001). Certainly a major concern is that the crisis-level shortage of teachers may override concerns regarding program quality (Berry, 2001). Indeed, one report, titled *Meeting the Highly Qualified Teachers Challenge: The Secretary's Annual Report on Teacher Quality* (USDOE, 2002), stated that the urgent national need for more teachers requires more creativity and flexibility from school districts and institutions of higher education in their teacher preparation efforts, and strongly supported alternative routes to certification. The report drew conclusions from a literature base that is inclusive at best. However, given the current national situation, it appears that the numbers of AC programs will continue to increase. Buck, Polloway, and Robb (1995) reported that 24 states offered AC programs for special education teachers, all of which included a specialty in at least the teaching of students with learning disabilities. The numbers have increased since that study was published. Preliminary findings from the current Alternative Routes to Certification (ARC) Indexing Study being conducted by the Center on Personnel Studies in Special Education (COPSSE) have identified more than 150 AC programs in 30 states (M. Rosenberg, personal communication, June 9, 2003). The need arises, then, for more research on the effectiveness of AC programs in preparing quality teachers.

Because of the lack of commonality among alternate routes, it is difficult to compare graduates across AC programs with those certified via conventional routes and, even more critically, to evaluate the success of AC programs for replication. Zeichner and Schulte (2001) and Miller, McKenna, and McKenna (1998) suggested that researchers need to divert attention away from comparative studies and focus on gaining a better understanding of the components of good teacher education regardless of the structural model that is being studied. Wilson, Floden, and Ferrini (2001) have called for research on AC that identifies the content and components of high-quality programs. Research currently being conducted by Johns Hopkins University and the University of Florida for the Center on Personnel Studies in Special Education and by the aforementioned SRI International study will address many of these issues.

Maintaining the Special Education Workforce

While teacher preparation influences the number of diverse teachers who are available to enter the special education teaching force, attrition impacts the numbers who stay. Attrition actually begins with teacher education graduates who never enter the classroom. Boe, Cook, Paulsen, Barkanic, and Leow (1999) found that only three of every four graduates of special education programs actually entered the workforce. An average of 55% of the CLD graduates from teacher preparation programs (all teaching disciplines) were found to have entered the field over a 6-year period, compared with 76% of White graduates. Clearly, large percentages of CLD teacher graduates do not enter the teaching workforce. The average total yield of all graduates in special education was 81% for those same years (Boe et al., 1999). Although CLD data were not provided, they could be assumed to be proportional to percentages of CLD graduates in general education.

As teacher shortages become more pronounced, the enticing recruitment packages offered by many districts are not enough to retain teachers when working conditions are considered too unpleasant (see Billingsley, this issue, for a full analysis of factors that contribute to teacher retention). According to data collected by Poda and Stanley (as cited in Wald, 1996), 41% of CLD teachers polled said they were likely to leave the teaching profession. Furthermore, Garibaldi (as cited in Ford et al., 1997) reported that only 29% of teachers from diverse backgrounds said they would choose teaching again, and 32% more were uncertain. The limited research results on the retention of CLD teachers are often contradictory. Singer (1993) found no differences between Black and White teachers regarding likelihood of remaining in the teaching profession. Dworkin (1980) found that Black and Chicano teachers reported significantly lower intent to leave the teaching field; data from Boe, Bobbit, Cook, and Whitener (1996) and Ingersoll (2001) confirmed that finding in analyses of actual attrition rates. Yet Ford et al. (1997) found that teachers from underrepresented groups were more likely to leave, with higher attrition rates in urban inner cities and in schools where difficult conditions contributed to high burnout rates. Clearly, more research is needed in this area.

Recommendations for Teacher Preparation

An institution's hiring practices, student recruitment and admission policies, and curricular programs reflect that institution's commitment to diversity (Villegas, 1993). Rigid adherence to a test score as the single indicator of an applicant's eligibility decreases the applicant pool (Bell & Morsink, 1986). Sadly, there is often a general lack of a broad institutional commitment to diversity in the college and university environment where teacher education programs are located (Grant, 1993). Stringent program entry/exit criteria and requirements to pass national or state examinations in basic skills, content areas, and pedagogy are hurdles for many CLD students, particularly those who experienced a poor-quality K–12 education that did not prepare them for higher education. Future studies must address these issues in order to enhance educational outcomes and increase the college enrollment of CLD

students in special education teacher preparation programs. Data on factors influencing career choices of CLD students and their perceptions of various professions would provide beneficial insights for educators and counselors and help generate more effective tools to recruit students from diverse backgrounds into the teaching profession and retain them (Sileo, 2000).

Fundamental to any effective personnel recruitment and retention system is the information on which the system rests. Reliable data collected on strategies and activities for recruitment, preparation, and training of special education teachers would provide solid empirical evidence for methods that are essential and those that are not. Ongoing, systematic data-collection analyses and syntheses are the basis for restructuring and modifying existing programs (Sileo, 2000). Future research must develop a methodologically sound design to collect and evaluate data on teacher recruitment and retention strategies that can be implemented in a relatively effortless and time-efficient manner.

The literature on AC, though based primarily on general education, is filled with possibilities for increasing the number of qualified CLD teachers. AC programs have successfully recruited CLD teachers, possibly due to their location in urban areas. Nonetheless, those locations are also where there are significantly larger numbers of CLD students and extreme teacher shortages. A major concern is that crisis-level shortages will override the development of quality AC programs. We recommend comparison of AC programs to traditional programs for training CLD individuals, including data on (a) the allure of AC as a means to enter the teaching field and (b) subsequent teacher effectiveness in the classroom.

The commitment to diversify the special education workforce is of critical importance. Yet, related factors must not be overlooked. The topic of culturally relevant teaching could not be covered within the scope of this article, but discussions of diversity are incomplete without an acknowledgement of cultural competence. Considering the increasing diversity in schools, it is likely that most teachers will have multiple racial and ethnic groups represented among their students. There is evidence that many culturally relevant instructional practices are effective irrespective of the race or ethnicity of the teacher (Ladson-Billings, 1994, 2001), and their impact on student outcomes must be the critical factor investigated in future studies. Teachers from all racial and ethnic backgrounds must be knowledgeable in culturally relevant pedagogy to deliver effective instruction to students from many racial and ethnic groups.

Future Research

A disparity exists between the numbers of teachers from diverse backgrounds and the public school student population. The repercussions of poverty, coupled with inequities in the educational opportunities available to CLD students, directly affect the diversification of the special education teacher pipe-line. Limited quantifiable data exist on the ethical and equitable reasons for diversifying the workforce in special education; the effects of diversity on student outcomes; and successful strategies to recruit diverse students into teacher preparation programs, and retain them. There are virtually no empirical data on preparation of special education professionals through alternate routes. Future research should examine the following critical concerns:

1. issues of equity and social justice in the diversification of the special education workforce;
2. CLD teacher behaviors, perceptions of academic ability, and referrals of CLD students compared to those of their majority counterparts and the subsequent effect on disproportionality;
3. effects of teacher race on academic and behavioral outcomes for students of all races with disabilities, separating the impact of teacher race from culturally relevant instructional practices;
4. strategies to increase the college enrollment of CLD students in special education teacher preparation programs;
5. a methodologically sound research design to collect and evaluate data on teacher recruitment and retention strategies that can be implemented efficiently; and
6. the efficacy of AC programs as compared with traditional programs for training CLD individuals, including data on (a) the attractiveness of AC as a means to enter the teaching field and (b) subsequent teacher quality and effectiveness in the classroom.

It is imperative that the nation's public and postsecondary educational systems address issues of diversity. Given that students from diverse backgrounds are actually the majority of students in many districts, inaction by professionals could sabotage the education of huge numbers of children. Successful strategies have been used to enhance educational opportunities for CLD students and increase the diversity in the workforce. Aggressive action must be taken to further the knowledge base in this area and disseminate and replicate the findings, or we will continue to leave children behind.

AUTHORS' NOTE

REFERENCES

Adams, H. B. (1907). *The education of Henry Adams: An autobiography.* New York: Heritage Press.

Adan, A. M., & Felner, R. D. (1995). Ecological congruence and adaptation of minority youth during the transition to college. *Journal of Community Psychology, 23,* 256–269.

Alliance Project. (1998, August). *Developing, recruiting, and retaining pre-service trainees: Lists of strategies from research and practice.* Nashville, TN: Author.

Aloia, G. F., Maxwell, J. A., & Aloia, S. D. (1981). Influence of a child's race and the EMR label on initial impressions of regular classroom teachers. *American Journal on Mental Deficiency, 85,* 619–623.

American Association for Employment in Education. (1999). *Educator supply and demand.* Columbus, OH: Author.

Andrews, L., Miller, N., Evans, S., & Smith, S. D. (2003). An internship model to recruit, train, and retain special educators for culturally diverse urban classrooms: A program description. *Teacher Education and Special Education, 26*(1), 74–78.

Andrews, T. J., Wisniewski, J. J., & Mulick, J. A. (1997). Variables influencing teachers' decisions to refer children for school psychological assessment services. *Psychology in the Schools, 34,* 239–244.

Appel, M. (1995). *Alternate certification: A practical alternative for increasing the minority pool?* Retrieved March 4, 2002, from http://www.trpi.org/publications.html

Armstrong, D. G., James, F. G., & Stallings, J. A. (1995). Decentralizing the minority recruitment and retention function: A report on one college of education's experience. In G. E. Thomas (Ed.), *Race and ethnicity in America: Meeting the challenge in the 21st century* (pp. 79–89). Washington, DC: Taylor & Francis.

Artiles, A. J., Harry, B., Reschly, D. J., & Chinn, P. C. (2002). Over-identification of students of color in special education: A critical overview. *Multicultural Perspectives, 4*(1), 3–10.

Au, K. H., & Kawakami, A. J. (1991). Culture and ownership: Schooling of minority students. *Childhood Education, 67,* 280–284.

Baca, L. M., & Cervantes, H. T. (1989). *The bilingual special education interface* (3rd ed.). Columbus, OH: Merrill/Prentice Hall.

Bahr, M. W., Fuchs, D., Stecker, P. M., & Fuchs, L. S. (1991). Are teachers' perceptions of difficult to teach students racially biased? *School Psychology Review, 20,* 599–608.

Barboza, D. (2001, August 10). Toyota earmarks $8 billion for diversification efforts. *The New York Times,* p. C3.

Bell, M. L., & Morsink, C. V. (1986, March–April). Quality and equity in the preparation of black teachers. *Journal of Teacher Education, 37*(2), 16–20.

Berry, B. (2001, May). Too many states are succumbing to quick fix alternative certification. *Teaching quality in the southeast: Best practices & policies.* Chapel Hill, NC: The Southeast Center for Teaching Quality. Retrieved May 15, 2003, from http://www.teachingquality.org

Billingsley, B. S. (2002a). *Special education teacher retention and attrition: A critical analysis of the literature.* Gainesville: University of Florida, Center on Personnel Studies in Special Education.

Billingsley, B. S. (2002b, February 27). *SPeNSE summary sheets: Beginning special educators: Characteristics, qualifications, and experiences.* Retrieved June 3, 2003, from http://www.spense.org/Results.html

Blackwell, J. E. (1984, October). *Increasing access and retention of minority students in graduate and professional schools.* Paper presented at the Educational Testing Services Invitational Conference on Educational Standards, Testing, and Access, New York.

Boe, E. E., Bobbitt, S. A., Cook, L. H., & Whitener, S. D. (1996). *Predictors of retention, transfer, and attrition of special and general education teachers: Data from the 1989 teacher follow-up survey* (Working Paper No. 96-12). Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Boe, E., Cook, L., Paulsen, C., Barkanic, G., & Leow, C. (1999). *Productivity of teacher preparation programs: Surplus or shortage in quantity and quality of degree graduates* (Data Analysis Report No. 1999-DAR2). Philadelphia: University of Pennsylvania, Graduate School of Education, Center for Research and Evaluation in Social Policy.

Bohr, L., Pascarella, E. T., Nora, A., & Terenzini, P. T. (1995). Do black students learn more at historically black or predominantly white colleges? *Journal of College Student Development, 36*(1), 75–85.

Buck, G. H., Polloway, E. A., & Robb, S. M. (1995). Alternative certification programs: A national survey. *Teacher Education and Special Education, 18*(1), 39–48.

Buriel, R. (1983). Teacher–student interactions and their relationship to student achievement: A comparison of Mexican-American children. *Journal of Educational Psychology, 75*(6), 889–897.

Casteel, C. A. (1998). Teacher–student interactions and race in integrated classrooms. *The Journal of Educational Research, 92,* 115–120.

Chinn, P. C., & Hughes, S. (1987). Representation of minority students in special education classes. *Remedial and Special Education, 8*(4), 41–46.

Connelly, V. J., & Rosenberg, M. S. (2003). *Teaching as a profession: Lessons learned from careers that have achieved full professional standing.* Gainesville: University of Florida, Center on Personnel Studies in Special Education.

Cornett, L. M. (1990). Alternate certification: State policies in the SREB states. *Peabody Journal of Education, 67*(3), 55–83.

Council for Exceptional Children. (2001). *Educating exceptional children: A statistical profile.* Arlington, VA: Author.

Craft, M. (1996). Cultural diversity and teacher education. In M. Craft (Ed.), *Teacher education in plural societies: An international review* (pp. 1–15). London: Falmer Press.

Dandy, E. B. (1998). Increasing the number of minority teachers: Tapping the paraprofessional pool. *Education and Urban Society, 31*(1), 89–103.

Darling-Hammond, L. (1990). Assessment of teaching: Purposes, practices, and implications for the profession. In J. V. Mitchell, Jr., & S. L. Wise (Eds.), *Teacher evaluation in the organizational context. Buros-Nebraska Symposium on Measurement & Testing* (pp. 137–181). Hillsdale, NJ: Erlbaum.

Dee, T. S. (2001). *Teachers, race, and student achievement in a randomized experiment* (Working Paper 8432). Washington, DC: National Bureau of Economic Research.

DeMeis, D. K., & Turner, R. R. (1978). Effects of students' race, physical attractiveness, and dialect on teachers' evaluations. *Contemporary Educational Psychology, 3,* 77–86.

Dial, M., & Stevens, C. J. (1993). Introduction: The context of alternative teacher certification. *Education and Urban Society, 26*(1), 4–17.

Dillard, C. (1994). Beyond supply and demand: Critical pedagogy, ethnicity, and empowerment in recruiting teachers of color. *Journal of Teacher Education, 45*(1), 9–17.

Dilworth, M. E. (1990). *Reading between the lines: Teachers and their racial/ethnic cultures* (Teacher Education Monograph No. 11). Washington, DC: ERIC Clearinghouse on Teacher Education and American Association of Colleges for Teacher Education.

Donovan, M. S., & Cross, C. T. (Eds.). (2002). *Minority students in special and gifted education.* Washington, DC: National Press.

Dunn, L. M. (1968). Special education for the mildly retarded: Is much of it justifiable? *Exceptional Children, 35,* 5–22.

Dworkin, A. G. (1980). The changing demography of public school teachers: Some implications for faculty turnover in urban areas. *Sociology of Education, 53,* 65–73.

Ehrenberg, R. G., Goldhaber, D. D., & Brewer, D. J. (1995). Do teachers' race, gender, and ethnicity matter? Evidence from the National Educational Longitudinal Study of 1988. *Industrial and Labor Relations Review, 48,* 547–561.

Elliot, S. N., Barnard, J., & Gresham, F. M. (1989). Preschoolers' social behavior: Teachers' and parents' assessments. *Journal of Psychoeducational Assessment, 7,* 223–234.

Emerson, R. (1929). *The complete writings of Ralph Waldo Emerson.* New York: Wm. H. Wise & Co.

Feistritzer, C. E. (1994). The evolution of alternative teacher certification. *The Educational Forum, 6*(2), 132–138.

Feng, H., & Cartledge, G. (1996). Social skill assessment of inner city Asian, African, and European American students. *School Psychology Review, 25,* 228–239.

Fenwick, L. T. (2001). *Patterns of excellence: Policy perspectives on diversity in teaching and school leadership.* Retrieved December 13, 2001, from http://www.sefatl.org/patternsmonograph.pdf

Ford, D. Y., Grantham, T. C., & Harris, J. J., III. (1997). The recruitment and retention of minority teachers in gifted education. *Roeper Review, 19,* 213–220.

Francis, K. C., Kelly, R. J., & Bell, M. J. (1993). Success in school: A research agenda on student attrition and retention in the SEEK Program. *Educational Evaluation and Policy Analysis, 15,* 437–441.

Frierson, H. T. (1991). Intervention can make a difference: The impact on standardized tests and classroom performance. In W. R. Allen & E. G. Epps (Eds.), *College in black and white: African American students in predominantly white and in historically black public universities* (pp. 225–238). Albany: State University of New York Press.

Fry, R. (2002, September). *Latinos in higher education: Many enroll, too few graduate.* Retrieved May 21, 2003, from http//www.pewhispanic.org/site/docs/pdf/latinosinhighereducation-sept5-02.pdf

Garcia, E. E. (2001). *Hispanic education in the United States.* Lanham, MD: Rowman & Littlefield.

Genzuk, M., & Baca, R. (1998). The paraeducator-to-teacher pipeline: A five-year retrospective on an innovative teacher preparation program for Latinas(os). *Education and Urban Society, 31*(1), 73–78.

Good, J. M., Halpin, G., & Halpin, G. (2000). A promising prospect for minority retention: Students becoming peer mentors. *Journal of Negro Education, 69,* 375–383.

Goodwin, A. L. (2002). Teacher preparation and the education of immigrant children. *Education and Urban Society, 34*(2), 156–172.

Gordon, J. A. (1994). Why students of color are not entering teaching: Reflections from minority teachers. *Journal of Teacher Education, 45,* 346–353.

Grant, C. (1993). The multicultural preparation of U.S. teachers: Some hard truths. In G. Verma (Ed.), *Inequality and teacher education* (pp. 41–57). London: Falmer Press.

Gresham, F., & Elliott, S. (1990). *Social skills rating system.* Circle Pines, MN: American Guidance Service.

Guillory, B. L. (2000). Project Access: A program to improve service delivery for culturally and linguistically diverse populations with speech, language, and hearing disorders. *Teacher Education and Special Education, 23,* 261–263.

Haberman, M. (1999). Increasing the number of high-quality African-American teachers in urban schools. *Journal of Instructional Psychology, 26*(4), 208–212.

Haller, E. J. (1985). Pupil race and elementary school grouping: Are teachers biased against black children? *American Educational Research Journal, 22,* 465–483.

Harry, B., Allen, N., & McLaughlin, M. (1995). Communication versus compliance: African-American parents' involvement in special education. *Exceptional Children, 61,* 364–377.

Harry, B., & Anderson, M. (1994). African American males in special education: A critique of the process. *The Journal of Negro Education, 63,* 602–619.

Harry, B., Klingner, J., Sturges, K. M., & Moore, R. F. (2002). Of rocks and soft places: Using qualitative methods to investigate disproportionality. In D. J. Losen & G. Orfield (Eds.), *Racial inequity in special education* (pp. 71–92). Cambridge, MA: Harvard Education Press.

Harry, B., Torguson, C., Katkavich, J., & Guerrero, M. (1993). Crossing social class and cultural barriers in working with families. *Teaching Exceptional Children, 26,* 48–52.

Harvey, W. B. (2002). *Minorities in higher education: Nineteenth annual status report.* Washington, DC: American Council on Education.

Hill, R., Carjuzaa, J., Aramburo, D., & Baca, L. (1993). Culturally diverse teachers in special education: Repairing or redesigning the leaky pipeline. *Teacher Education and Special Education, 16,* 258–269.

Hosp, J. L., & Reschly, D. (in press). Referral rates for intervention or assessment: A meta-analysis of racial differences. *The Journal of Special Education.*

Houston, W. R., Marshall, F., & McDavid, T. (1993). Problems of traditionally prepared and alternatively certified first-year teachers. *Education and Urban Society, 26*(1), 78–89.

Huling-Austin, L. (1986). What can and cannot reasonably be expected from teacher induction programs? *Journal of Teacher Education, 37*(1), 2–5.

Hunt, N., & Marshall, K. (1994). *Exceptional children and youth: An introduction to special education.* Boston: Houghton Mifflin.

Ingersoll, R. (2001). *Teacher turnover, teacher shortages, and the organization of schools.* Seattle: University of Washington, Center for the Study of Teaching and Policy.

Institute for Higher Education Policy. (2002, August). *The policy of choice: Expanding student options in higher education.* Retrieved May 22, 2003, from http://www.ihep.org/Pubs/PDF/Choice20020805.pdf

Jackson, G., & Cosca, C. (1974). The inequality of educational opportunities in the southwest: An observational study of ethnically mixed classrooms. *American Educational Research Journal, 11,* 219–229.

Jan, T. (2003, February 13). Schools need diverse staff, experts say. *The Oregonian,* p. 1.

Kea, C. D., & Utley, C. A. (1998). To teach me is to know me. *The Journal of Special Education, 32,* 44–47.

Keller, H. R. (1988). Children's adaptive behaviors: Measure and source generalizability. *Journal of Psychoeducational Assessment, 6,* 371–389.

King, S. H. (1993). The limited presence of African-American teachers. *Review of Educational Research, 63,* 115–149.

Kirby, S. N., Darling-Hammond, L., & Hudson, L. (1989). Nontraditional recruits to mathematics and science teaching. *Educational Evaluation and Policy Analysis, 11*(3), 301–323.

Kwiatkowski, M. (1998). *Debating alternative teacher certification: A trial by achievement.* Retrieved March 4, 2002, from http://www.trpi.org/publications.html

Ladson-Billings, G. (1994). *The dreamkeepers: Successful teachers of African American children.* San Francisco: Jossey-Bass.

Ladson-Billings, G. (2001). The power of pedagogy: Does teaching matter? In W. H. Watkins, J. H. Lewis, & V. Chou (Eds.), *Race and education: The roles of history and society in educating African American students* (pp. 73–88). Boston: Allyn & Bacon.

Laosa, L. M. (1979). Inequality in the classroom: Observational research on teacher–student interactions. *Atzlan, 8,* 51–66.

Little, J. W. (1990). The mentor phenomenon and the social organization of teaching. In C. B. Cazden (Ed.), *Review of research in education: Vol. 16* (pp. 297–351). Washington, DC: American Educational Research Association.

MacKay, K. A., & Kuh, G. D. (1994). A comparison of student effort and educational gains of Caucasian and African-American students at predominantly white colleges and universities. *Journal of College Student Development, 35,* 217–223.

MacMillan, D. L., Gresham, F. M., Lopez, M. F., & Bocian, K. M. (1996). Comparison of students nominated for prereferral interventions by ethnicity and gender. *The Journal of Special Education, 30,* 133–151.

McCarty, L. L., & Gallegos, A. (2000). Bilingual multicultural special education: An integrated personnel preparation program. *Teacher Education and Special Education, 23,* 264–270.

McPhail, I. (1981). Why teach test-wiseness? *Journal of Reading, 25*(1), 32–38.

Michael-Bandele, M. (1993). *Who's missing from the classroom? The need for minority teachers* (Report No. ISBN-89333-097-3). Washington, DC: American Association of Colleges for Teacher Education. (ERIC Document Reproduction Service No. ED352361)

Miller, J. W., McKenna, M. C., & McKenna, B. A. (1998). A comparison of alternatively and traditionally prepared teachers. *Journal of Teacher Education, 49,* 165–176.

Mitchell, A. (1998). African American teachers: Unique roles and universal lessons. *Education and Urban Society, 31*(1), 104–122.

Monteith, D. S. (2000). Professional development for administrators in special education: Evaluation of a program for underrepresented personnel. *Teacher Education and Special Education, 23*(4), 281–289.

National Commission on Teaching and America's Future. (2003, January). *No dream denied: A pledge to America's children.* Retrieved May 22, 2003, from http://www.nctaf.org/dream/report.pdf

Natriello, G., & Zumwalt, K. (1993). New teachers for urban schools? The contribution of the provisional teacher program in New Jersey. *Education and Urban Society, 26*(1), 49–62.

Neal, L. I., McCray, A. D., Webb-Johnson, G., & Bridges, S. T. (2003). The effects of African American movement styles on teachers' perceptions and reactions. *The Journal of Special Education, 37,* 49–57.

Nettles, M. T., & Perna, L. W. (1997). *The African American education data book: Volume 1. Higher and adult education.* Fairfax, VA: Frederick D. Patterson Research Institute.

Office of Special Education Programs. (2000). The importance of minority institutions of higher education in the preparation of special education personnel. *Twenty-Second Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (pp. I-1 through I-14). Washington, DC: U.S. Department of Education.

Olson, L. (2000). Finding and keeping competent teachers: Quality counts— Who should teach? [Special Issue]. *Education Week, 19*(18), 12–17.

Patton, J. M. (1998). The disproportionate representation of African Americans in special education: Looking behind the curtain for understanding and solutions. *The Journal of Special Education, 32,* 25–31.

Paulsen, M. (1990). *College choice: Understanding student enrollment behavior* (ASHE-ERIC Higher Education Report No. 6). Washington, DC: George Washington University, School of Education and Human Development.

Powless, D. L., & Elliott, S. N. (1993). Assessment of social skills of Native American preschoolers: Teachers' and parents' ratings. *Journal of School Psychology, 31,* 293–307.

Prieto, A. G., & Zucker, S. H. (1981). Teacher perception of race as a factor in the placement of behaviorally disordered children. *Behavioral Disorders, 7*(1), 34–38.

Riley, R. (1998). Our teachers should be excellent, and they should look like America. *Education and Urban Society, 31*(1), 18–29.

Rosenberg, M. S., & Rock, E. E. (1994). Alternative certification in special education: Efficacy of a collaborative, field-based teacher preparation program. *Teacher Education and Special Education, 17,* 141–153.

Rosenberg, M. S., & Sindelar, P. T. (2001). *The proliferation of alternative routes to certification in special education: A critical review of the literature.* Arlington, VA: The National Clearinghouse for Professions in Special Education, The Council for Exceptional Children.

Shabazz, M. (1995). The bandwagon: Some schools lessen weight of standardized tests scores. *Black Issues in Higher Education , 11*(25), 24–26.

Shen, J. (1998). Alternative certification, minority teachers, and urban education. *Education and Urban Society, 31*(1), 30–41.

Shinn, M. R., Tindal, G., & Shira, D. A. (1987). Special education referrals as an index of teacher tolerance: Are teachers imperfect tests? *Exceptional Children, 54,* 32–40.

Shipp, V. H. (1999). Factors influencing the career choices of African American collegians: Implications for minority teacher recruitment. *The Journal of Negro Education, 68,* 343–351.

Sileo, T. W. (2000). *Reform and restructuring in special education teacher preparation: Multicultural considerations and pedagogical strategies.* Nashville, TN: Vanderbilt University, Peabody College, Alliance Project.

Singer, J. (1993). Are special educators' career paths special? Results from a 13-year longitudinal study. *Exceptional Children, 59,* 262–279.

Smith, D., & Yzquierdo, Z. (2002). *Alliance outcomes.* Nashville, TN: Vanderbilt University, Peabody College.

Smith-Davis, J., & Billingsley, B. S. (1993). The supply/demand puzzle. *Teacher Education and Special Education, 16,* 205–220.

SPeNSE. (2002, July). *Key findings.* Washington, DC, Office of Special Education Programs. Retrieved May 15, 2003, from http://www.spense.org

SRI International. (2002, October). *Alternative certification: Design for a national study.* Retrieved May 15, 2003, from http://www.sri.com/policy/cep/teachers/altcert.pdf

Stoddart, T. (1990). Los Angeles Unified School District intern program: Recruiting and preparing teachers for the urban context. *Peabody Journal of Education, 67*(3), 84–122.

Stoddart, T., & Floden, R. E. (1995). Traditional and alternative routes to teacher certification: Issues, assumptions, and misconceptions. In K. Ze-

ichner (Ed.), *Reforming teacher education in the United States* (pp. 80–106). New York: Teachers College Press.

Su, Z. (1996). Why teach: Profiles and entry perspectives of minority students as becoming teachers. *Journal of Research and Development in Education, 29,* 117–133.

Tobias, S., Cole, C., Zibrin, M., & Bodlakova, V. (1982). Teacher–student ethnicity and recommendations for special education referrals. *Journal of Educational Psychology, 74,* 72–76.

Tobias, S., Zibrin, M., & Menell, C. (1983). Special education referrals: Failure to replicate student–teacher ethnicity interaction. *Journal of Educational Psychology, 75,* 705–707.

Townsend, B. (2000). The disproportionate discipline of African American learners: Reducing school suspensions and expulsions. *Exceptional Children, 56,* 381–391.

Trent, S. C., & Artiles, A. J. (1998). Multicultural teacher education in special and bilingual education: Exploring multiple measurement strategies to assess teacher learning. *Remedial and Special Education, 19,* 2–6.

U.S. Census Bureau. (2002). *Statistical abstract of the United States: 2002.* Retrieved May 22, 2003, from http://www.census.gov/prod/2003pubs/02statab/statistical-abstract-02.html

U.S. Department of Education. (2001). *IDEA Part B annual report tables.* Retrieved June 3, 2003, from http://www.ideadata.org/tables24th%5Car_af8.htm

U.S. Department of Education. (2002a). *IDEA Part B annual report tables—Personnel 2000—Table AC2.* Retrieved June 3, 2003, from http://www.ideadata.org/tables25th%5Car_ac2.htm

U.S. Department of Education. (2002b). *Meeting the highly qualified teachers challenge: The secretary's annual report on teacher quality.* Washington, DC: Office of Postsecondary Education, Office of Policy Planning and Innovation.

U.S. Department of Education, National Center for Education Statistics. (1996). *Schools and staffing in the United States: A statistical profile 1993–94* (NCES 96-124). Washington, DC: U.S. Government Printing Office.

Villegas, A. M. (1993, February). *Restructuring teacher education for diversity: The innovative curriculum.* Paper presented at the annual meeting of the Association of Teacher Educators, Los Angeles.

Villegas, A. M., & Clewell, B. C. (1998). Increasing the number of teachers of color for urban schools. *Education and Urban Society, 31*(1), 42–61.

Voltz, D. L. (1998). Cultural diversity and special education teacher preparation: Critical issues confronting the field. *Teacher Education and Special Education, 21*(1), 63–70.

Wald, J. L. (1996). *Culturally and linguistically diverse professionals in special education: A demographic analysis* (Report No. ISBN-0-86586-285-0). Reston, VA: National Clearinghouse for Professions in Special Education. (ERIC Document Reproduction Service No. ED397579)

Whitworth, J. (2000, March). Preparing, recruiting, retaining special education personnel in rural areas. In *Capitalizing on leadership in rural special education: Making a difference for children and families.* Paper presented at the meeting of the American Council of Education, Alexandria, VA. (ERIC Document Reproduction Service No. ED439893)

Wilson, S. M., Floden, R. E., & Ferrini-Mundy, J. (2001, February). *Teacher preparation research: Current knowledge, gaps, and recommendations.* Seattle, WA: Center for the Study of Teaching and Policy.

Wise, A. (1994). Choosing between professionalism and amateurism. *The Educational Forum, 58,* 139–146.

Woodcock, R. (1987). *Woodcock reading mastery tests–Revised.* Circle Pines, MN: American Guidance Service.

Wright-Harp, W., & Muñoz, E. (2000). Preparing bilingual speech–language pathologists: The development of an innovative master's degree program. *Teacher Education: Special Education, 23,* 290–303.

Zeichner, K., & Schulte, A. (2001). What we know and don't know from peer-reviewed research about alternative teacher certification programs. *Journal of Teacher Education, 52,* 266–282.

Zucker, S. H., & Prieto, A. G. (1977). Ethnicity and teacher bias in educational decisions. *Instructional Psychology, 4,* 2–5.

Zumwalt, K. (1991). Alternative routes to teaching: Three alternative approaches. *Journal of Teacher Education, 42*(2), 83–92.