

IMPROVING THE ACHIEVEMENT OF AFRICAN AMERICAN STUDENTS

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INTRODUCTION

Volumes of information are available from a wide variety of forums and sources, including mass media, scholarly treatises, autobiographical stories, and reflective memories, which document the disproportionately high rates of low achievement among African American students in U. S. public schools. Explanations for this situation, and suggestions on how to remediate it are almost as voluminous as the recognition of the problem. Given this plethora of research and scholarship on "the problem" we saw no need to revisit it once again here. Instead, this project focused on solutions to the problem---that is, what is being done in schools throughout the country to reverse these patterns by increasing the achievement of African American students. It was undertaken at the request of the Washington State Commission on African American Affairs. This project makes a significant contribution to the Commission's efforts to establish a "data base" advocacy position in persuading elected officials to implement "quality of life" policies and programs for African American youths in the state within the health care, educational, legal, and vocational arenas.

This study was undertaken with two major purposes in mind. The first was to locate and summarize curricular and instructional programs in grades K-12 that are improving the school achievement of African American students, and which have evidence to document their success. The second was to infer from these programs some general principles which characterize curricular and instructional practices that make schooling more effective for African American students. Permeating both of these purposes and their related tasks are questions about the extent to which successful school practices incorporate theoretical ideas of culturally responsive teaching and learning for African American students.

The discussions in this report are organized to follow the sequence of its purposes. We begin with a brief summary of the key premises of culturally responsive teaching in general, and Afrocentric education in specific reference to African Americans. This is followed by a summary of the strategies we used to locate information about curricular and instructional programs that are improving African American students' achievement. The next section of the report is devoted to a detailed discussion of the substantive components of the successful programs identified, and explanations of the types of effects they are having on student achievement. A set of general principles we recommend for use in creating curricular and instructional programs which further improve the achievement of African American students are presented in the last section of this report. These principles are derived from insights gained from our analyses of successful

programs for African Americans being implemented throughout the U. S.

Guiding Assumptions

Our search for information pertinent to meeting the goals of this project was governed by four key assumptions. First, successful programs can vary in emphasis. Some may concentrate primarily on curriculum content, while others may be grounded in pedagogy, or styles of teaching. We included both of these in our analyses.

Second, there are many different types and indicators of "achievement." As Wentzel (1991, p. 6) explains, "academic achievement is not the sole criterion for defining success and competence in the classroom . . . teachers clearly value nonintellectual student characteristics, and they actively teach rules requiring socially responsible forms of behavior. Moreover, students not only value such behavior but often equate behaving socially responsible with academic achievement." Programs which improve student achievement in the core academic subjects and skill areas (reading, writing, math, science, social studies), and standardized test scores as measures of mastery are significant because of the high status attached to them by the general public. Consequently, they formed the central core of our analyses. However, we agree with Wentzel that other types and indicators of African American students' achievement are important as well. Among these are self-understanding and self-esteem; skills in interpersonal relations with other ethnic, social, and cultural groups; social consciousness, caring,

and competence; moral commitments to the advancement of equality and social justice; and political and vocational efficacy.

Dealing adequately with all of these indicators of achievement require time and energy that far exceeded the boundaries of this project. We therefore limited our focus to programs affecting the achievement of African Americans in the high status academic core subjects and skills. However, we did not restrict "achievement indicators" to only standardized tests scores, or even grade point averages (GPA). Other indicators, such as increased participation or enrollment rates in high status subjects, reduced disciplinary referrals, and student feelings of personal confidence and efficacy, also were used.

A third guide for this analysis was the belief that program interventions which improve the achievement of African American students can exist at all levels of schooling. Although we concentrated our efforts on K-12 programs, occasionally references are made to interventions in colleges and universities. Problems associated with African American achievement in colleges frequently parallel those in the K-12 grades. Furthermore, successful interventions in higher education can generate some reform principles that can be applied to the lower grades. The reverse also is true; principles extrapolated from K-12 curricular and instructional reforms can be applied in improving the higher education experiences of African Americans.

A fourth assertion we made which helped to direct our search was that successful instructional programs for African American students are *culturally responsive*. and *Afrocentric*. That is, they

include content about African American history, culture, and contributions, and classroom instruction is synchronized with elements which have been identified as central to these students' cultural orientations, socialization, work habits, learning styles, and presentation and performance patterns. Or, as the findings of research conducted by Foster (1989, 1993, 1995) and Ladson-Billings (1994, 1995) revealed, successful learning for African American students entails being both academically and culturally competent.

This argument is further supported by the Edwards and Polite (1992), and Hoover (1978). In their study of 41 highly successful African American men and women who "came of age" during the Civil Rights Movement, Edwards and Polite found that all were strongly grounded in their ethnic identity and cultural affiliation. They explained that these "children of the dream" (full integration) were:

first and foremost affirmed and empowered by a positive sense of racial identity. They fully understand that as blacks they will encounter obstacles, prejudices, and inequities, but *they never view their race as the cause of the problem*. They understand it is the perverse reactions of others to the black race which constitute the deficiency. It is this essential recognition that grounds the thinking of achieving blacks, enabling them to successfully operate out of a 'positive sense of blackness,' a positive sense of who they are (Edwards & Polite 1992, p. 6).

Hoover reviewed the characteristics of 15 successful schools in which African American students read at grade level. While these schools did use a very structured approach to reading they also employed a group-oriented philosophy to teaching and learning; exposed students to the academic strengths of African and African American cultures; encouraged a learning style which included audience participation, choral reading, group chanting, and unison responses; used an approach to discipline that reflected the values of the cultural community; and expressed high performance expectations for and positive attitudes toward both students and teachers.

For these reasons, some school programs which have received acclaim for reversing the achievement of African Americans, such as Reading Recovery, DISTAR (Direct Instructional System for Teaching and Remediation), and Prime Time, are not included in this analysis. Because culturally responsive education played such a major role in shaping this entire project and our selection of programs for review, some of its major ideas are discussed briefly before we proceed to describing the actual programs identified and their achievement effects.

Culturally Responsive Education

Several leading advocates of multicultural education and Afrocentrism suggest that the educational process for African American students should be centered in their own cultural traditions. The extent to which this is done effectively, it is likely that all aspects of their school achievement will improve

significantly. According to Banks (1993) and Banks and Banks (1995) quality multicultural education occurs when significant, authentic, and high status knowledge and examples about different ethnic groups' cultural contributions and historical experiences are incorporated into the teaching of school subjects and skills, such as math, science, social studies, reading, computer literacy, and critical thinking. Afrocentrist scholars likewise place heavy emphasis on teaching content about African American history and culture as a condition of academic relevance and effectiveness. For example, Asante (1991), the most nationally recognized contemporary Afrocentrist, believes teaching content about their ethnic group's history and culture improves African American students' chances for academic success by centering them in their own cultural heritage. The Afrocentric educational ideology helps students to see themselves as "subjects" rather than "objects" in learning situations, and as active producers not merely passive consumers of knowledge. Gordon (1993) considers the Afrocentric culturally responsive philosophy and methodology to be "education that is liberatory" (p. 457). She elaborates further that knowledge of their own cultural facts, values, stories, legends, ideals, and mythologies can "assist African-Americans to place themselves and their history in the global history of humankind . . . [and] engage in action to change societal structures in ways that result in the improvement of their lives" (p. 457).

This culturally centered approach to teaching and learning for African Americans is both natural and protective. As a natural phenomenon, it makes the educational mission directly relevant to

African Americans. Schools are designed to teach students academic, social, and civic skills, and ensure that they learn their cultural heritages. Without incorporating their ethnic group's contributions, perspectives, and learning and living styles into the routine operations of schools, this right of "cultural affirmation" is denied to African American students. Molefi Asante (1991) describes this dimension of culturally relevant or responsive education in detail in *The Afrocentric Idea in Education*. In a later article (1991/92) he explains that:

"the lack of direction and confidence that plague many African-American children . . . [happens] because they are not culturally centered and empowered in their classrooms" (p. 29).

"The true 'centric' curriculum seeks for the African, Asian, and Hispanic child the same kind of experience that is provided for the white child---[an "ethnic self-esteem curriculum]" (p. 29).

"without cultural grounding . . . learning will have destroyed . . . [African American children's] sense of place. Increasing numbers of children abandon, in their minds, their cultures in order to become like others culturally. . . {Thus} schools . . . reinforce feelings of limited self-worth and cultural dislocation by ignoring the historical contributions of African Americans or

devaluing their culture" (p. 30).

Lee, Lomotey, and Smith (1990) use a "protective" line of argument in their support of culturally responsive education for African American students. They believe this kind of education is necessary to counteract the dominance and hegemony of European American values, beliefs, and contributions in most classroom instruction. The use of Afrocentric content and processes in teaching also facilitates ethnic and cultural pride, equity, empowerment, and continuity, as well as higher academic achievement for African American students.

Asa Hilliard (1991/92) extends this line of reasoning to the principles of "truth" and "validity." He believes that schools must pluralize their curricula if they are to "teach the whole truth of the human story." This is necessary because:

The primary goal of a pluralistic curriculum process is to present a truthful and meaningful rendition of the whole human experience. This is not a matter of ethnic quotas in the curriculum for 'balance'; it is purely and simply a question of validity. Ultimately, if the curriculum is centered in truth, it will be pluralistic, for the simple fact is that human culture is the product of the struggles of all humanity, not the possession of a single racial or ethnic group. . . . we must awaken to the fact that no academic content is neutral nor is the specific cultural content of any ethnic group universal in and of itself content . . . [Therefore] we must facilitate in students . . . a critical orientation (p. 13).

African Americans always have been major players in the development of human and U. S. history and culture. These "stories" are incomplete or distorted when their contributions are excluded or distorted. Speaking of how African Americans have helped shape "the American literary tradition," Toni Morrison (1992) contends that they are "one of the most furtively radical impinging forces on the country's literature," and "The contemplation of this black presence is central to any understanding of our national literature and should not be permitted to hover at the margins of the literary imagination" (p. 5). Furthermore,:

the major and championed characteristics of our national literature---individualism; masculinity, social engagement versus historical isolation; acute and ambiguous moral problematics; the thematics of innocence coupled with an obsession with figurations of death and hell---are . . . in fact responses to a dark, abiding, signing Africanist presence. . . the very manner by which American literature distinguishes itself as a coherent entity exists because of this unsettled and unsettling population (pp. 5-6).

. . . Africanism has become . . . both a way of talking and a way of policing matters of class, sexual license, and repression, formations and exercises of power, and meditations on ethics and accountability. Through the simply expedient of demonizing and reifying the range of color on a palette, American Africanism makes it possible to say and not say, to inscribe and erase, to escape and engage, to act out and act on, to historicize and render

timeless. It provides a way of contemplating chaos and civilization, desire and fear, and a mechanism for testing the problems and blessings of freedom (p. 7).

Consequently, all students, not just African Americans, will benefit from Afrocentric culturally responsive curriculum and instruction.

Research conducted by Hollins and Spencer (1990) indicate that *culturally responsive* teachers working with African American students include elements of their home culture, incorporate their cultural perspectives, build a sense of community and cooperation, and facilitate academic, social, and personal development. Lee and Slaughter-Defoe (1995, p. 360) add that these teachers express a "philosophy of education that emphasizes acquiring knowledge not only of the world, but also specifically about African American history and culture in order to empower students to succeed in an antagonistic world and society." From her own study (1993) and review of other research (1995) on effective African American teachers with African American students Foster reached conclusions similar to Lee and Slaughter-Defoe. She observes that these teachers:

express cultural solidarity, affiliation, and connectedness with the African American community. . . this solidarity is manifest in the way teachers characterize their relationship to students; the responsibility they take for educating the whole child by teaching values, skills, and knowledge that enable school success and participation in the larger society; and their demonstrated competence in the norms of the African American community.

Excellent African American teachers draw on community patterns and norms in structuring their classrooms. They link classroom activities to students' out-of-school experiences and incorporate familiar cultural and communicative patterns into their classroom practices, routines, and activities (1995, p. 578)

Ladson-Billings (1994) found virtually identical traits among the teachers she identified as effective with African American students, regardless of their personal ethnic identity. They helped their students "to be academically successful, culturally competent, and sociopolitically critical" (Ladson-Billings 1995, pp. 477-478). Lipman (1994, 1995b) adds that culturally responsive teachers for African American students exhibit "caring mentorship;" build upon students' knowledge and experiences; foster academic achievement without compromising the students cultural and ethnic identity; teach toward personal and collective empowerment; continually connect classroom knowledge with the students' lived experiences; express confidence in students' abilities; and engage them in intellectually challenging and meaningful (personally and socially) learning.

Therefore, the theoretical arguments in favor of culturally responsive teaching for African Americans students, and related research emphasize several common points. These indicate that (1) school achievement can be improved for African American if their cultural heritages and styles of thinking and learning are included in the regular routines of classroom instruction; (2) "achievement" is greater than academics and test scores; cultural competence, critical

thinking skills, social consciousness, building community, and political efficacy are significant types of achievement as well; and (3) Afrocentric-based culturally relevant teaching is beneficial to European Americans and other students of color, as well as African Americans. As we developed this project, we accepted these ideas and incorporated them in our data collection, analyses, interpretations, and conclusions.

Search for Successful Programs

Two major sources of information were used to identify curricular and instructional programs what may have positive effects on the school achievement of African American students. One was the published articles and books which report research studies and present descriptions of instructional programs in practice. The second was a survey of state departments of education and a selected list of school districts throughout the U. S. The information from the two sources was combined into a composite analysis, the results of which are presented in the "Program Effects" section of this report.

The Literature Review

The library search was conducted using the ERIC system through the University of Washington. Several different descriptors were employed to ensure that the computer-assisted scan for appropriate sources of information would be comprehensive. They

included African Americans, Black Americans, minorities, and ethnic groups in various combinations with achievement, academic programs, school performance, and successful programs. These were supplemented with other prompts related to African Americans and reading, writing, science, social studies, and mathematics. The computer searches were complemented with manual reviews of professional journals which deal specifically with the education of African Americans, and content area-specific journals.

The literature reviewed involved primary and secondary sources. Both categories included a combination of books, professional journals, and research and service centers. The primary sources reported original information on research studies and instructional programs. Among those canvassed were:

- Research studies reported in general education journals, such as *Urban Review*, *Urban Education*, the *Journal of Education*, *Equity & Excellence*, *Anthropology and Education Quarterly*, *Theory Into Practice*, and *Education and Urban Society*.

- Subject matter journals such as *Social Education*, *Language Arts*, *The Reading Teacher*, *Journal of Research in Mathematics Education*, the *Reading Research Quarterly* and the *Journal of Research in Science Teaching*.

- Research journals whose content cuts across all domains of the educational enterprise, such as the *American Educational Research Journal*, the *Educational Researcher*, the *American Journal of Education*, the *Journal of Research and Development in Education*, and the *Journal of Educational Research*.

- Journals which deal with educational issues specific to African Americans, such as the *Journal of Negro Education*, the *Journal of Black Psychology*, and *Urban Education*.

- Information on curriculum projects and research studies produced by national centers, such as the National Reading Research Center; National Diffusion Network; Center for Research on the Education of Students Placed at Risk; the Center for Science, Math, and Technology Education; the Urban Child Research Center; and the Center for Urban Education

The secondary literature sources used in this report were reviews or summaries of original research previously reported elsewhere. They included three major types:

- Books in which the authors referenced studies to support their theoretical contentions and practice proposals. These were authored texts as well as edited volume. Neisser's (1986) *The School Achievement of Minority Children*.

- Professional journals which are devoted almost exclusively to research reviews. Among these are the *Review of Educational Research*, the *Harvard Educational Review*., and the *Review of Research in Education*.

- Research handbooks in which different authors summarize and analyze research related to the variety of topics and issues that may also make references to teaching African American students. These included the *Handbook of Research on Teaching*., the *Handbook of Research on Multicultural Education*, the *Handbook of Research on Teaching English Language Arts*, *Handbook of Research on the*

Education of Young Children, and the Handbook of Research on Curriculum

The Survey

The survey of state departments of education (DOEs) and school districts emerged as a reaction to the literature review. It produced disappointing results. Very few successful culturally responsive programs for African American students are reported in the published professional literature. Most of those few do not provide rich detailed information on the programs content and procedures, or specific evidence of improved achievement. We hoped the survey would fill these voids and increase the number of programs available for inclusion in this analysis.

Our survey was directed toward two targeted populations---the 50 DOEs and selected school districts. The school districts involved were selected from a larger data set that is part of the bi-annual survey of elementary and secondary schools conducted by the U. S. Department of Education Office of Civil Rights (USDOE OCR). This survey is comprised of a stratified sample of school districts throughout the U. S. The most recent data is from the 1992-93 school year, and include 4,692 districts. The OCR survey is designed to monitor the racial compositions of special education categories. In addition to this information it includes total enrollment in the school districts, and the racial distribution of the student population.

Two important criteria were used in selecting the districts from the OCR list for our study. The first was to include only those

districts with a total student enrollment of 10,000 or more. There were 459 districts which met this condition. The second criterion related to the proportion of African Americans in each district. We decided to include only districts which had 15 percent or more African American students. There were 201 districts in the OCR study which met this criterion. Therefore, our total survey was comprised of 50 state DOEs and 201 school districts, or a total of 251 possible respondents.

A letter was sent to each of the possible participants requesting information on programs designed to improve the achievement of African Americans. It specified that we wanted descriptive details on the content and procedures of the programs, and evidence or proof of their effects on achievement. The letter also stated that we were primarily interested in achievement in the *core academic* subjects and skill areas (math, science, reading, writing, social studies). However, descriptions of other types of programs, and data on other kinds of achievement (such as positive self-concepts, school attendance, increased participation in high status courses, reduced disciplinary referrals) also would be appreciated.

Two mailings were sent out to the list of participants. Two weeks after the deadline for responses to the initial request, a follow-up letter was mailed to those who did not respond the first time. They were given another three weeks to respond.

The responses to the survey was very low, and, contrary to our expectations, they did not fill the voids which resulted from the literature review. They, too, produced very little useful information on what schools are doing throughout the U. S. to improve the

achievement of African American students, and the success of these efforts in the form of documented evidence.

A total of 75 (30%) responses were received from the survey. Seventy two of these were in the form of letters and written materials; the other three were by telephone. From the 201 school districts we received 52, or 26 percent, responses. The response rate from the state DOEs was 23, or 45 percent.

The responses received were categorized by the type of information they provided. These included six categories. First, were responses with useful information. The 11 (15%) responses in this category included rich descriptions of the programs content and implementation procedures, as well as evidence of their effects on student achievement. Second, 14 responses (19%) presented information which was not useful because it was not relevant to the purpose and focus of this study. A third type of response (9, or 12%) provided no information, but suggested another person or source we should contact to get what we needed. Fourth, were respondents (6, or 8%) who sent some information on student achievement, but it was not related to the subjects and skills of concern to us. These respondents may have described students' attendance rates at different magnet schools, their enrollment statistics by subjects, school attendance, and standardized test scores. However, they did not attach these behaviors to any specific programmatic interventions for and about African Americans. Fifth, were responses which indicated that their school district and/or state DOE had no programs designed specifically to improve the achievement of African American students. There were 20 of these

(27%). The sixth type of responses (11, or 15%) were those which described programs rather vaguely, and included no data about their effects on student achievement. The other four respondents (5%) decided not to participate in the study, and did not offer any explanation for this decision.

The combined analyses of the programs described in the professional literature and the state DOE and school district surveys revealed that they could be grouped according to whether their emphases were primarily curriculum content or instructional strategies that are congruent with African American cultural orientations, values, and learning styles. The specific programs these analyses identified are discussed below by these categories.

Effects of Curriculum Programs on Achievement

Despite significant improvements in textbooks' treatment of African Americans, their virtual exclusive use as the source of classroom instruction (70 to 90 percent) (Apple 1986; Davis, et al 1986), and assertions among multiculturalists that culturally diverse curriculum materials improve student achievement, little actual data are available which either substantiates or invalidates these claims. However, that which does exist is more supportive of than contradictory. It also deals with "special projects" instead of information about African American culture, history, and experiences being routinely infused into the content of regularly taught subjects and skills.

A notable example of these trends is the research reported by Diamond and Moore (1995) on a multicultural literacy program which they were instrumental in designing, facilitating, and evaluating. The program was implemented in three culturally diverse school districts in southeastern Michigan over four years, with a multiethnic student population in kindergarten through eighth grade. Its emphasis is primarily pedagogy (these features and effects will be discussed in detail later on) but with some curriculum content components. The multicultural literature integrated into teaching reading and writing skills highlighted the contributions of Asian Americans, Latinos, Native Americans, African Americans, and Native Hawaiians in a variety of literary genres. Among these genres are traditional folk literature, song lyrics, poems, fiction, and informational books (essays, biographies, autobiographies).

The authors (Diamond & Moore 1995) of this study identified four salient qualities of multicultural literature which are significant to successful literacy teaching. First, it is meaningful because it speaks with depth to the interests and imaginations of students from diverse cultural backgrounds and ethnic groups. It resonates with children's creative ways of thinking and their natural quest for knowledge. Second, multicultural literature illuminates common connections among diverse peoples through emotions, needs, and desires, and provides a medium for understanding human connections. Third, multicultural literature helps students understand social issues, problems, and conflicts, and the necessity for social change. Students read about characters who experience

realistic situations and challenges with social injustices and inequities. As a result of these literary encounters they "become critical readers, who learn to view the world from multiple perspectives as they construct their versions of the truth, . . . [and] make informed and rational decisions about the most effective ways to correct injustices in their community" (Diamond & Moore 1995, p. 14). Fourth, multicultural literature is a rich source of factual information about diverse cultures and ethnic groups. The way this information is presented broadens the students' understanding of history, geography, and sociology. It also "provides a means of crossing boundaries that often exist between subjects and becomes a natural bridge between language arts and the content areas" (p. 14). A combination of reading aloud, reading with partners, sustained silent reading, and discussing and responding to what was read, was used to teach the multicultural literature.

No quantifiable data (such as increased test scores and grade point averages) were presented on how this multicultural literacy program affected student achievement, but the authors did provide other powerful indicators of its success. Most of these derived from observing changes in students' behaviors as they interacted with their teachers, peers, and the instructional materials. All of the students became more interested in books and reading; their frequency and quality of participation in class discussions increased; comprehension skills improved; confidence in their reading ability increased; they did more independent reading; and their self-esteem and pride in their own cultural heritage improved. (Diamond & Moore 1995).

Grice and Vaughn (1992) studied the responses of African and European American students in one third-grade classroom to culturally conscious (analogous to culturally relevant and culturally responsive) African American literature. They specifically examined *comprehension* (did the students understand what the books were about); *authenticity* (did the students think the stories and characters could be real); *identity* and *involvement* (could the students personally relate to and see themselves in the story); and *evaluation* (did the students liked or disliked the books, and why). The researchers defined African American culturally conscious literature as "picture books, novels, biographies, and poetry which create stories that are cast in predominately black settings" (p. 149). This literature was intended to "stimulate pride in the Afro-American heritage; popularize the triumphs of notable black Americans; encourage an admiration for and a sense of commitment to the African-American community; promote the value of family life; and, in so doing, empower young readers by enhancing their self-confidence and decision-making skills" (p. 149).

Of the 24 books used in the study 21 were categorized as "cultural conscious," and 3 were "melting pot" (the characters were middle class and no written references were made to their racial identity). They were varied across situation, textual focus, and genre to include African American heritage, biography, community, family ties, friendship, and poetic verse. Gender also was an important criterion for selection, and several female and male characters were featured in the books chosen for inclusion in the study. The final selection included 20 picture books, 2 juvenile biographies, and 4

realistic fictions with characters close in age to the third grade students involved in the project. The student participants attended an elementary school where 58 percent of the population was African American and 42 percent was European American. All read two years below grade level and had scored below the 25 percentile on the MAT-6 achievement test. In their language arts lessons, they had demonstrated the ability to follow story lines, form opinions about the realism of characters and story plots, project themselves into stories, and explain their evaluation of books comparable in difficulty to the ones used in this study.

The results of the Multicultural Literacy Project indicated that (1) regardless of ethnicity or gender, students found it easier to like, accept, and relate to books about family, community, and friends; (2) the level of acceptance of and identity with these books was higher for African Americans, especially females; (3) books about African heritage and the ones which were in poetic verse were the most difficult for both European and African American students to like, accept as realistic, and identify with personally, but they were somewhat less problematic for the African Americans; and (4) the students' contextual knowledge and prior experience either facilitated or interfered with their ability to receive the messages from the books. Overall, and regardless of ethnicity, most of the children in the study identified easily with the African American characters, and expressed a "collective optimism, evident in the joy with which they received books about self-help and happy times" (Grice & Vaughn 1992, p. 161).

The Shelby County Public School District (Memphis, Tennessee) reports similar positive academic, personal, and motivational effects of its course on "African American Literature." Although no quantitative data were provided to substantiate its claims, the district says this course is very successful because it improves the mastery of literature skills, overall GPAs, and the self-esteem of African American students. The district adds further that:

Students who enroll in African American Literature experience less difficulty in the mastery of English literature and American literature skills and thus have higher GPAs. First of all, they are exposed vicariously to works that are meaningful to them. As a result, interpretations and explications are fun learning experiences rather than cumbersome ones. Self-esteem, a viable entity in the success or failure of students, soars because enrollees feel good about the accomplishments of other African Americans. Learning that many writers with humble beginnings later became poet laureates gives African American students the encouragement that they need to be proud and accomplished young men and women. Finally, these students develop an appreciation for the opportunities that they have to succeed. Many realize that now is the time to optimize these advantages so that they can reach their zenith later in life! (Shelby County Schools Official, survey correspondence, 1996)

These findings from the Webster Groves and Multicultural Literacy Projects, and the Shelby County African American Literature Course validated a theory and revealed a need. They affirmed that students from one ethnic group can learn and appreciate the cultures and contributions of other groups. They also provided support for the assertions that teaching students their own cultural heritages is personally validating and academically motivating. But, without adequate background knowledge and contextual orientations, multicultural content will be suspect or rejected by students regardless of their ethnic identity. This was apparent in the Grice and Vaughn study by the students' rejection, on all points examined (e. g., comprehension, authenticity, identification, evaluation) of books about the African heritage. Both the African and European American students did not know enough about African heritage for it to be meaningful or realistic to them, so they tended to reject it outright.

Operating independently, but motivated by a concern for the persistent low reading and writing achievement of African American students Chapin (1990), Chapman (1994), Smitherman (1994), Krater, Zeni, and Cason (1994), and Ball (1996) have tried to locate specific causes of these problems. None of these researchers was willing to assume that academic failure was due to inherent intellectual limitations, or that the cultural orientations of African Americans were at fault. They also felt that if curriculum reforms intended to improve these students' academic achievement were to be effective, they must deal with specifically diagnosed performance interferences, in culturally appropriate ways.

Chapman (1994) began her research with the premise that dialect interference was not the major cause of the writing failures of African American students. To test this hypothesis she did a textual analysis of the failed essays of twenty-five African American students on the Florida state College-Level Academic Skills Test (CLAST). The purpose was to determine if nonstandard surface (something other than grammatical or syntactical) features of Black English Vernacular (BEV) were the most probable causes of the essays receiving failure evaluations. Among the surface features were spelling errors, incorrect punctuation, misuse of capitals, wrong abbreviations, words omitted, absence of "s" to signal plurals, not using "ed" to indicate past tense, and lack of subject-verb agreement. She found that BEV features accounted for only 15 percent of all nonstandard surface features found in the papers. When the BEV features were corrected prior to grading, 35 percent of the papers still received a "failed" assessment, while 45 percent of those which had not been corrected received a "pass" grade. These results confirmed that for this sample of papers, BEV surface features alone did not account for the students' writing failures. They were further corroborated by comments from the scorers on why they judged the papers inadequate to merit a passing evaluation. They pointed more to the substantive quality of the essays than their structural elements, such as the lack of support for arguments and contentions, and ideas being illogical, unclear, unfocused, repetitious, rambling and lacking sufficient details.

Similar studies were conducted by Chapin (1990) and Smitherman (1994). Both researchers analyzed writing samples of

African American students from the National Assessment of Education Progress (NAEP) tests. Chapin added to her data pool writing samples from the 1986 New Jersey High School Proficiency Tests, to compare the performance of eighth and ninth grade European and African Americans.

Smitherman (1994) worked with a team of writing instructors who had taught African Americans, and another sociolinguist with expertise in BEV to develop a conceptual rubric of African American discourse style. After independently analyzing 75 writing samples from the NAEP data pool, at three different intervals, discussing the results, and reaching 85 percent agreement, the group identified ten recurrent discourse features. They were then used to analyze 867 NAEP essays. These discourse features, which extended and elaborated those observed by Chapin, (Smitherman 1994, pp. 86-87) were:

- Rhythmic, dramatic, and evocative language
- References to color, race, and ethnicity
- Use of proverbs, aphorisms, and Biblical verses
- Sermonic tone reminiscent of African American church rhetoric, especially in vocabulary, imagery, and metaphor
- Direct, personal address, and conversational tone
- Cultural references
- Ethnolinguistic idioms
- Verbal inventiveness and unique nomenclature
- Cultural values and community consciousness, as evident by concern for the entire community not just individuals.

- Personalized involvement with and immersion in situations and events.

The essays Smitherman and her colleagues analyzed were selected from two of NAEP's three categories of writing performance—imaginative (432 samples) and persuasive (435 samples). In the NAEP assessment each writing sample is given a *holistic score* for overall competency in language facility, organization, mechanics, and syntax, and a *primary trait score* for fluency in executing the specifically assigned writing task (Applebee, et al. 1990). The discourse scores assigned to the essays by Smitherman's research team were compared to the NAEP rating scores and to BEV syntactical features (*ed* and *s* morpheme, hyper-correction, copula, irregular verbs, multiple negation, *it* expletive, subject-verb agreement, undifferentiated third person, pronominal apposition, etc.) to determine if there were any correlations. The results indicated that (1) the production of BEV grammar goes up as the use of African American discourse style features goes down; (2) essays that receive the highest primary trait and holistic NAEP scores have more discernible African American discourse features than those receiving low scores; and (3) African Americans perform better on imaginative-narrative (which includes many cultural discourse features) than persuasive writing tasks. These findings led Smitherman to conclude, in African American idiom, "the blacker the berry the sweeter the juice." That is, the more expressive discourse features present in students' writing samples, the higher their scores for fluency and accomplishment on assigned rhetorical tasks. This

was true regardless of the amount of BEV included in the writing (Smitherman 1994).

Ball (1995) also found that cultural discourse features were more prominent in the expository writing of African American students than syntactical, phonological, and lexical ones. She did an in-depth textual analysis of writing samples of four African American 11th and 12th graders to determine the strategies and styles of expression they used in their formal, school-related, and informal, non-school writing. The participants (two males and two females) were academically successful with cumulative grade point averages of 3.0 or above; scores at or above grade level on English standardized tests; competence in both Standard mainstream and African American Vernacular English (AAVE) dialects; from urban, lower or working-class backgrounds; and enrolled in an eleventh grade college preparatory English class. The study was based on the assumption that "students' cultural experiences and language uses within their non-school discourse communities influence academic literacy practices and educational success" (Ball 1995, p. 256). Ball also believes that African American discourse styles are congruent with new approaches to teaching expository writing which focus less on mechanical skills, and more on writing as "participation in a dialogue" (p. 282).

A committee of ten teachers in the Webster Groves School District (Missouri) used techniques similar to Smitherman, Chapin, and Ball to analyze writing samples of 7-12 grade African American and European American students who scored below grade level means. A total of 476 papers were examined for rhetorical

features, such as fluency, development, organization and voice, and for control of Standard English skills such as correct spelling, sentence structure, and language variations, to ascertain writing patterns which would explain low test scores (Krater, Zeni, & Cason 1994). They found that both the African American and European American students sometimes dropped standard endings (s, es, ed) from verbs and nouns. These features occurred more often in the writing of African Americans, but they were not prolific among either group.

The results all of these studies have some clear implications for classroom instruction. As Smitherman (1994), Ball (1995), Zeni and Krater-Thomas (1990), and Krater, Zeni, and Cason (1994), and Lee (1991b) suggest African American discourse style is a literary strength. Therefore, it should be used as a building block for improving the writing achievement of Black students. For example, Lee's (1991a; 1991b) proposes that a discourse genre of "signifying" can be used as "personal and cultural scaffolding" to teach African American students more technical strategies of literary analysis, interpretation, and criticism. This type of scaffolding also "can be viewed as an apprenticeship comparable in many respects to the Vygotskian framework of semiotic mediation in a zone of proximal development, . . . [and to bring students] closer to the formal strategies that lead to constructing interpretations of themes and symbols in fictional texts" (Lee 1991a, p. 299). Lee (1991b) found it to be very effective in teaching African American high school seniors, whose reading scores ranged from the 2nd to 60th national percentiles, the "technology of literary interpretation and criticism"

(p. 299). That is, the ability to comprehend and interpret figurative language, ironic verbal constructions, and complex implied relationships in literary texts.

Given the findings about cultural discourse features and knowledge backgrounds affecting performance to a greater extent than the linguistic structures, curricula which simply emphasize practice drills on syntactical mechanics will not improve the writing, speaking, and thinking skills of students of color. Rather, they must provide opportunities for students to learn and perform academic skills in "cultural voice and style." Ball's (1996) research corroborated the positive effects of incorporating personal experiences and frames of reference of students into the writing curriculum. When her 11th and 12th grade African American students were allowed to choose their own topics to write about, and the audience with whom to converse, "a heightened sense of personal authority, first hand knowledge, engagement, . . . expressions of excitement . . . [and] a greater incidence of culturally influenced and individual creativity" (Ball 1996, p. 31) were evident in their written texts. These results are reminiscent of findings reported by Foster (1989) about how a community college teacher's use of African American verbal discourse techniques increased the thinking, questioning, concept mastery, and cogency and fluidity of ideas expressed by her African American students.

The Webster Groves Writing Project (Krater, Zeni, & Cason 1994) has been in operation since 1987, and involves fourteen English teachers in grades 6-12. It was designed initially to serve only low-achieving African Americans, but expanded after two years

to include all students in the participating teachers' classes who were performing below grade-level mean. The number of participating students has increased each year, from the original 19 to 293 in 1993.

The program is organized around eight key principles and strategies which combine African American cultural characteristics and contributions with process and literature approaches to writing. The principles include building on students' strengths; individualizing and personalizing instruction; encouraging cooperative learning; increasing control of language; the use of computers; personal involvement with reading and writing; building cultural bridges; and expanding personal horizons. Among the specific elements of African American culture woven into the curriculum components of the project are short stories and personal narratives written in conversational styles; oral language interpretations; storytelling, script reading and playwriting; memorizing poetry, proverbs and quotations; call-response, lining out and dramatic performance; language variation as modeled by a variety of literary voices; samples of literature produced by such authors as Langston Hughes, Virginia Hamilton, Alice Walker, Richard Wright, Paul Lawrence Dunbar, Gwendolyn Brooks, Toni Morrison, Sterling Brown, and Nikki Giovanni; African American history; and using "rap" as an expressive genre in book talks, creating character sketches, and producing advertisements.

The Webster Groves Writing Project is achieving some noteworthy success. At the end of its first year of operation the scores of the participating students on the district's writing

assessment increased by an average of 2.0 points compared to a mean increase of 1.6 for all students. The scores for the African American students in the project increased by 2.3 points in middle schools and 1.7 points in high schools. Past writing assessments in the district increased one point from grade to grade over an academic year. The subsequent years of the project also produced positive results. For the most part, all targeted students made greater gains than their non-targeted counterparts. The performance of African Americans was comparable to other targeted students. The range of increase in their scores on the writing assessments was 0.7 to 4.0 across the first four years of the project, compared to a range of 1.0 to 4.6 points for all students in the district, and 0.7 to 4.0 points for all targeted project students. The exception to these patterns occurred for grades 9 and 10 in the second year when all targeted and African American students demonstrated negative gains. The overall results are encouraging, but the total writing scores of the African American students remain significantly lower than other students in the project, as well as the entire district. These differences ranged from 0.8 to 3.4 points across grades 7-11.

During its fifth year the project shifted from using local district measures to determine its level of success to student performance on the Missouri state writing test. Again, the results were positive. Sixty-seven percent of the project's eighth graders (215) scored above the state mean, and 14 percent (45) scored below the mean. Only six percent of all students taking the Missouri writing test scored 5 or 5.5 out of a highest possible score of 6 points, and 20 percent of them were participants in the Webster Groves Writing

Project (Krater, Zeni, & Cason 1994). During the sixth year (1993) the project shifted to portfolio assessments emphasizing the categories of "beauty and power, craft and care, thoughtful reflection, and variety and versatility" (p. 389). No systematic data are yet available from these. In the initial efforts to use portfolios, the students did succeed in selecting samples of their work which embodied the criteria. However, their "reflective letters shied away from analyzing how a particular piece of writing shows a particular criteria" (p. 389, and focused instead on describing their least and most satisfying writing samples.

In addition to quantitative data attesting to the positive effects of the Webster Groves Writing Project, Krater, Zeni, and Cason (1994) report qualitative evidence as well. This appears in the form of the quality of individual essays, and the students' feelings of confidence in their writing abilities. The writing samples demonstrate improvements in the development and organization of ideas, specific word choices, better introductions and endings, and more focused thinking and clarity of expression. The students express greater confidence in and satisfaction with their ability to write. This was particularly apparent in the reactions of the African American students. Thus, the students' writing empowerment has shown a remarkable improvement as a result of participating in the Webster Groves Writing Project. The impact of the project has been so significant that the school district is adapting its principles and methods for K-9 mathematics, and two other districts have adopted the model for their own writing programs.

Math and Science Programs

The mathematics, science, and engineering curricula designed to improve the achievement of African American students are almost totally supplementary to the regular curriculum, include little specific content about cultural diversity, and do not report results as performance on conventional achievement measures such as standardized test scores. Most are designed to improve the African American students' participation in these subjects, and have been successful in meeting this goal. Eight are summarized here to illustrate these trends, and to demonstrate their similarity and variety.

The Summer Mathematics and Science Institute (SMSI) is a five-week summer program for high school students in New York City. It was created in 1981 by the College Discovery and Development Program (CDDP) of the City University Board of Education to increase the interest and participation of minority youth in math and science courses and careers. There are now five high school CDDP centers, one for each of the boroughs of New York City. The program is similar in purpose and design to others that have been tried in other major cities such as the Chicago Area Pre-College Engineering Program (CAPCEP); the Detroit Area Pre-College Engineering Program (DAPCEP); the Mathematics Engineering and Science Achievement (MESA) program in California and Utah; the Philadelphia Regional Introduction for Minorities in Engineering (PRIME); the Career Orientation Modules to Explore Topics in Science (COMETS) in Kansas; the Increasing the Mathematical Power of All

Children and Teachers (IMPACT) Project in the Montgomery County, Maryland Public Schools; and the Southeastern Consortium for Minorities in Engineering (SECME) in Broward County (Ft. Lauderdale, FL) Public Schools (Ellis & Smith 1987; Archer 1990; Campbell 1996).

The SMSI is culturally responsive teaching in that it uses mentoring in paired and group structures, and a variety of teaching styles to make instruction more congruent with the learning styles students bring to the experience. The other goals emphasize developing teaching and learning skills appropriate to new developments and priorities in math and science, such as observing and classifying, making predictions, defining operational variables, designing investigations, experimenting, decision-making, and inductive reasoning. Language arts skills (e.g., outlining, writing, note-taking) and computer literacy (word processing, graphing, and using other graphics) are taught as support systems to enhance learning the substantive content and technical skills of math and science. The students who participate in the program are predominately African American, Latino, and female; most are from economically impoverished backgrounds; many are not native U. S. born or English dominant speakers; and their academic abilities range from grade-level competence to two years below grade level in language arts, mathematics and science performance.

Ellis and Smith (1987) surveyed the 26 students who participated in the 1983 SMSI to determine its effects. The study was conducted in 1986, when the participants had graduated from high school. Three criteria were used to assess the achievement effects of the program. These were high school completion, further

participation in math and science courses, and attendance in post-secondary educational institutions. Eighteen of the 26 participants were available for interviews. Of them all had graduated from high school, and 17 were enrolled in post-secondary education, and participating in mathematics and science courses. Four years after the initial experience 69 percent of the original 26 participants continued to show high interest in math and science. The participants also felt that mentoring helped them to better understand the disciplinary skills taught, to gain greater self understanding, and to form valuable peer relationships. Ellis and Smith (1987, p. 576) concluded that these results "support the notion that a positive relationship exists between the students' participation in the SMSI program and their academic performance as well as their interest in science and mathematics."

The objectives, content, and clients of the Teaching Excellence for Minority Student Achievement in the Sciences (TEMSAS) are very similar to those of the SMSI. TEMSAS is designed to address the academic failure of African American and Latino pre-adolescent youths in Los Angeles by providing summer enrichment experiences to the regular curriculum of the 10 participating public schools. Adenika-Morrow's (1995) report on this project focuses on the 483 students who participated in the summer component of the program. Eight-seven percent of the students are African Americans and 13 percent are Latinos, 64 percent are females and 36 percent are males. The academic achievement of 93 percent of the students fell within the first and second quartiles on standardized tests of basic skills. The TEMSAS curriculum emphasizes using math and science to

raise the self-esteem and personal achievement aspirations of low-achieving students; developing an understanding and appreciation of the economic utility of science; providing at-risk students with a motivating and meaningful context for learning; modeling active, integrative learning strategies; and using "creative sciencing" which focuses on inquiry, higher-order thinking skills, and authentic achievement that encompasses cognitive, affective, and aesthetic learning. No specific African American content is included in the program.

Daily debriefings and exit assessments were the "data sources" used to determine the effects of TEMSAS. According to Adenika-Morrow (1995, pp. 36-37) the teachers in the program feel "the most rewarding and personal aspect of being engaged in . . . [it] was observing the increased pleasure, the participation, and the demonstration of skill and competence the students experienced from the science and the math investigations and experiments." Other indicators of the positive effects accrued from TEMSAS are the "personal empowerment" the students derived from their improved academic skills, increased faith and confidence in their abilities, and "an electrifying excitement among the students as they experimented, communicated, and solved problems" (Adenika-Morrow 1995, p. 37).

The Urban Schools Science and Mathematics Program (USSAMP) operates in the Atlanta, Cleveland, and Detroit public schools, and is sponsored by grants from the Ford Motor Company and the U. S. Equal Employment Opportunity Commission. It was initiated in 1989 by the Academy for Educational Development (AED)

to increase the math and science achievement of Latino, African American, and female students in grades 6-8, improve the students' self-esteem, and better prepare them to take advanced courses in these subjects in high school (Jibrell 1990; Archer 1993). The program has three major components--- content emphasis on problem-solving, higher-order thinking skills, integrating technology into teaching, and connecting teaching and learning to the relevant daily life experiences of students; professional development to improve teaching skills in math and science, and changing teachers' expectations about the abilities of African American, Latino, and female students; and improved academic and non-academic supports for students, such as counseling, career awareness, mentoring, tutoring, and motivation. Each site has extended its initial program focus to include the contributions and careers of Africans and African Americans in math, science, and technology. As stated in the Detroit project proposal, these latter efforts were designed to "unravel the threads of African genius so that students [would] be empowered with knowledge and with greater self-esteem, fostering positive feelings towards schools in general and science and mathematics in particular" (Archer 1993, p. 29).

Across the three school districts a total of nine schools (5 in Detroit, 2 in Cleveland, and 2 in Atlanta) and more than 1,940 students (440 in Atlanta; 1,500 in Detroit; Cleveland did not provide any demographic information) are involved in the USSAMP. They participate in after school and Saturday morning enrichment sessions which engage them in inquiry, hands-on, problem-solving, mentor-mentee, and cooperative learning activities. The results are meeting

the projects' expectations---students' feelings of confidence in math and science are increasing; enrollments in high school advance courses are improving; the mastery levels of math and science skills are greater for students who participate in the programs; and applications to the Atlanta magnet high school in mathematics, science, technology and engineering, and the Detroit pre-medical technical vocational center have grown markedly (Archer 1993).

Another major indicator of these positive effects is the magnitude of the students' involvement in science and math fairs sponsored by their school districts and states. Archer (1993) reports that the students in the Detroit USSAMP participation rate has increased significantly, and they have been extraordinarily successful. Of the 92 schools which participated in the 1992 fair, "DPS (Detroit Public Schools) students won 1,364 awards, including 264 gold awards (which included the grand prize, first-, second- and third-place prizes). . . Halley [one of the target schools] entered 71 projects, and every project received a prize, including 36 gold---more than any other school received. One class alone, of 35 students, won 18 prizes, including 10 gold" (Archer 1993, p. 37).

Hill (1990) presents impressive results for the Detroit Area Pre-College Engineering Program (DAPCEP) which parallel those of TEMSAS and USSAMP. Its purpose, too, is to increase the number of African American, Latino, and Native American students choosing math and science related careers. Whereas the TEMSAS and USSAMP projects target middle school students, DAPCEP involves students in grades 7-12. It has been in existence since 1976. By 1989 the project involved 8 Michigan colleges and universities, 24 high

schools, 36 middle schools, and 2,000 students (1,300 middle and 700 high school). Like other similar ones, this is a Saturday enrichment program. It takes place on university campuses and is taught by university professors. The participants perform very well in science and engineering fairs. For example, the number of DAPCEP entries in the annual Detroit Metropolitan Science Fair increased from 26 (representing 11%) in 1977 to 1,326 (62%) in 1990. The quality of the students' performance as indicated by winnings has shown a corollary increase. The number of winning entries has grown from 2 in 1977 to 118 in 1990 (Hill 1990).

An even more powerful indication of the success of this program is the academic performance and career choices of its graduates. According to data reported by Hill (1990) and based on responses from 584 respondents who participated in DAPCEP between 1976 and 1986, 74 percent of those enrolled in college are pursuing degrees in engineering, math, and/or science, and 81 percent of the college graduates majored in these fields. These are significant results, but they have two serious limitations with respect to the purpose and focus of this report. Although this program is designed for students of color, there is no evidence that its curriculum includes any multicultural content or pedagogy. Nor is any information provided for how the results and effects are distributed across ethnic or gender groups.

Four mathematics, science and technology curriculum projects have generated more traditional achievement data. These are the Say Yes, QUASAR, ABC, and EQUITY 2000. None of them have strong multicultural content or instructional components.

The Say Yes Schools Project began in 1987 with a two-year project in the Washington, DC public schools (DCPS) and the Houston Independent School District (HISD). The New Orleans Public Schools (NOPS) joined the project at the end of the pilot. In the 1988-1989 school year, 22 elementary schools were involved, 12 in the HISD, 8 in the DCPS, and 2 in the NOPS (Beane 1990). Like other math, science, and technology intervention programs for African Americans and other students of color, this one has no explicit culturally specific content. Only vague references are made to including contributions of scientists and mathematicians of color.

Beane (1990) summarizes the achievement effects of the two-year pilot of the Say Yes Project. In mathematics the participating students gained 25.97 points on the Metropolitan Achievement Test (MAT) compared to a gain of 15.65 points for non-participants. These achievements represented grade equivalents of 1.1 and 0.7, respectively. In reading the achievement was 25.00 (0.5 grade equivalent) for participants and 12.24 (0.4 grade equivalent) for non-participants. A similar pattern of academic growth, although slightly larger, occurred in science. The Say Yes students gained 17.58 points compared to 10.08 points for non-participants, or 1.3 and 0.7 grade equivalents. These achievements are supplemented by increased participation in science fairs. Beane feels this is significant because "many persons currently working in scientific fields have related that they were positively influenced by the science fair project experience as youngsters" (p. 372).

The Qualitative Understanding and Amplifying Student Achievement and Reasoning (QUASAR) is a math program for

students attending middle schools in urban economically disadvantaged communities. It began in the 1990-1991 school year and operates in six districts. About half of the participating students are African Americans, a third are Latinos, and one eighth are European Americans. For many of these students English is not their primary language of discourse (Silver & Stein 1996). QUASAR is based on the proposition that poor students of color living in urban depressed areas can and will "learn a broad range of mathematical content, acquire a deeper and more meaningful understanding of mathematical ideas, and demonstrate proficiency in mathematical reasoning and in solving complex mathematical problems, if they receive appropriately enhanced forms of instruction" (Silver & Stein 1996, p. 477). Both classroom observational data and tests results substantiate this proposition. Instructional tasks used in project classrooms emphasize mathematical conceptual understanding, reasoning, and problem solving. An analysis of 150 instructional tasks over three years revealed that only 20 percent of them emphasized computation or memorization of information. This compares favorably to similar research (Stodolsky 1988) in more traditional classrooms where 97 percent focus on low-level cognitive skills.

Because district-level and national standardized tests have limited capacity to assess high-level cognitive outcomes, the QUASAR project has developed its own test. The QUASAR Cognitive Assessment Instrument (QCAI) consists of open-ended tasks designed to evaluate students' knowledge of a wide range of mathematical content, their understanding inter-relationships among

math concepts, and their ability to use high-level thinking and reasoning in solving complex math tasks (Lane, 1993; Silver & Stein, 1996). Analyses of QCAI results from the first three years of the project in four participating schools indicate that students' capacity for mathematical reasoning, problem-solving, and communication has increased. The number of students providing responses at the two highest-score levels increased from 18 to 40 percent between fall 1990 and spring 1993. These results are true for the total group of participating students, as well as students by ethnic and linguistic categories. This is evident by the fact that African American and Spanish-speaking and bilingual Latinos perform similarly to their European American counterparts. The use of high level reasoning, multiple solution strategies, multiple connected representations, and mathematical explanations increase the performance levels and quality of all students at all grade levels (Lane, Silver & Wang 1995; Silver & Lane 1995; Silver & Stein 1996).

QUASAR eighth grade students also performed better than their demographic peers, and as well as or greater than a national representative sample on the 1992-93 NAEP (National Assessment of Educational Progress) Grade 8 mathematics assessment. These achievements were particularly evident on tasks assessing conceptual understanding, problem-solving, and those requiring students to produce their own answers instead of selecting from a predetermined set of options. For tasks assessing components new to middle school math curricula, such as statistics, probability, algebra, and functions, the QUASAR students' performance in 1993 equaled that of the national sample on many tasks, and "split the difference"

between the national and disadvantaged urban samples on the remaining tasks (Silver & Stein 1996).

Increased numbers of students qualifying for placement, enrolling in, and passing ninth-grade algebra are other significant indicators of QUASAR's success. Silver (1995) and Silver and Stein (1996) report that in one QUASAR school the number of students who performed well enough on the qualifying exam to be placed in a ninth-grade algebra class increased from 8 percent in the first year of the project to 40 percent by the end of the fourth year. In another, in its first year of requiring all students to take ninth grade algebra, QUASAR participants had the second highest passing rate at the end of the first grading period, and the average final course grade was superior to non-participating schools. This same school had a reputation prior to the project of being populated by low-performing students.

Project IMPACT has produced results similar to QUASAR, but for a younger (K-3) and more multiethnic (African Americans, African Haitians, Central and South American Latinos, Vietnamese, Korean Americans, Cambodians, and Middle Eastern) student population. On criterion-referenced tests designed specifically for the program, and administered in one of six languages (English, Spanish, French, Portuguese, Vietnamese, and Khmer, a Cambodian dialect), IMPACT students perform better than non-participating comparison groups on geometry items, problem-solving and reasoning, whole number concepts, place values, and fraction meaning. These differences reflect a greater mastery of mathematical abstractions for IMPACT students. Most of these

differential achievement patterns are established by the end of the first grade, and maintained throughout the third grade (Campbell 1996). Because of these achievement effects, Campbell (1996, p. 465) contends that the "problem-solving strategies used by the children in the IMPACT treatment schools reflect a rich understanding of mathematics and reveal that the children are confronting mathematics problems with confidence." The project now includes grades 4 and 5, but systematic achievement data for them are not yet available.

Griffin (1990) presents the results of two studies on the alumni of A Better Chance (ABC) initiatives to stimulate and support students' of color involvement in math and science education. The research was designed to investigate factors affecting the math and science career choices of ABC graduates between 1967 and 1983. Of the 813 respondents to the survey, 76 percent were African American, 11 percent were Latino, 3 percent were Native American, and 3 percent were Asian American. The total group's gender distribution was 57 percent males and 43 percent females. The survey examined the variables of service functions; post ABC school enrollment; academic performance; self-perceived ability; sex roles, family and community values, and participation in advanced math and science courses; and choice of math and science careers. The results of these studies indicate that (1) the grade points of nearly all ABC students are slightly less than a B average, and about one-third has GPAs of B or above; and (2) ABC students pursue math/science careers at a far greater rate than do other minority students. This

rate of choice (approximately 25 percent) is equal to the overall proportion of U. S. students choosing math/science careers nationally.

Another significant achievement effect is that the standardized tests scores of ABC students upon admission to their schools (which often are not outstanding) do not correlate very highly with their academic propensity or their inclinations to select careers in math and science. This revelation led Griffin (1990, p. 435) to conclude that "the pool of minority students capable of and potentially interested in math/science careers is broader than that which a focus on traditional measures of selection may indicate." It also reaffirms ABC's decision not to rely entirely on traditional measures to identify potentially talented students. Instead, ABC selects students "who, while their test scores and certain other indicators may not be uniformly outstanding, exhibit confidence, tenacity, and determination to succeed" Furthermore, great emphasis is placed "on students' writing samples and the overall quality of their applications, seeking evidence of thoughtfulness and creativity, clearly expressed and interesting ideas, and a general sense of direction" (Griffin 1990, pp. 435-436).

The most extensive undertaking thus far to improve the participation in and achievement of African Americans and other students of color in high status math and science courses and careers is EQUITY 2000. This project uses mathematics at the middle school level as the initial lever of change to "close the gap in the college going and success rates between minority and non-minority, advantaged and disadvantaged students" (Jones, July 1994, p. 5). Sponsored by the College Board, the program began in 1990 as a six-

year pilot which emphasizes academic enrichment. EQUITY 2000 is a comprehensive education reform initiative that "requires students, teachers, counselors, parents, and administrators to rethink the traditional approach to education. For the first time, all students are expected to enroll in and excel in upper-level courses" (Jones 1994, p. 12). It is implemented in 700 schools in 14 districts in six sites, and involves over 500, 000 students (*Equity 2000 n. d; A Commitment to Excellence and Equity 1993;*).

Several different data sources and information from six pilot sites are used to compile a comprehensive profile of the effects of EQUITY 2000 on the attitudes, behaviors, expectations, and achievements of students of color. The data sources include statistics on enrollment and achievement in algebra and geometry; classroom observations; self-reports of teachers and counselors; surveys of three eighth grade cohorts on their perceptions and attitudes toward math and college; an Algebra I pilot assessment administered in 10 classes in each project site ; and PSAT, SAT, and AP test-taking and performance trends from the pilot sites. The pilot sites are Milwaukee, Nashville, Prince George's County, Providence, Fort Worth, and a consortium of nine School districts in San Jose, and San Jose-East Side (Everson & Dunham October 1995;). The data compiled by Everson and Dunham (1995) and Jones (1994) on EQUITY 2000 indicate several major trends and patterns of achievement.

Enrollment in Algebra and Geometry is approaching the project's goal for all ethnic groups, and across all sites. The goal of Equity 2000 is 100 percent enrollment in 9th grade algebra and 10th

grade geometry. More progress has been made in algebra than geometry, for European and Asian students than for Latinos and African Americans, and in Milwaukee than other sites. Milwaukee reported 100 percent enrollment of 9th graders in algebra for all ethnic groups for the 1993-94 and 1994-95 school years. This district also has experienced the greatest amount of enrollment increase in algebra for ethnic groups of color. From 1990-91 to 1994-95 the number of African American ninth graders taking algebra in Milwaukee increased by 76 percent (from 24 to 100%). Over the same period the increases for the other three ethnic groups were 72 percent for Latinos, 56 percent for Asian Americans, and 48 percent for European Americans. The project coordinator for the Metro Nashville Public Schools reports that during the first year of the program enrollment in Algebra I increased by 30 percent for Black students and 33 percent for Whites (Tune, survey correspondence, March 15, 1996).

Milwaukee, Prince George's County, and Fort Worth are having the greatest success in geometry enrollment. Among these districts, the enrollment across ethnic groups ranged from 61 percent for African Americans for 1994-95 in Milwaukee to 90 percent for European Americans in Fort Worth. In general, geometry enrollment increases are higher for African American across sites.

The number of students enrolled in AP courses and taking AP exams increased in all EQUITY 2000 project sites. The range of increase for students taking AP exams was from 26 percent for Europeans Americans to 371 percent for Puerto Ricans. The increased participation of other ethnic groups between 1990 and

1994 included 100 percent for Native Americans, 91 percent for African Americans, and 103 percent each for Mexican Americans and Asian Americans (*AP at all EQUITY 2000 Sites*, n. d..)

No specific data are available on the other indicators of the success of EQUITY 2000, such as students' grades in algebra and geometry, attitudes toward math, and intentions for enrollment in college math courses by ethnic groups. *EQUITY 2000* (n. d.) simply states that "[e]ven as the number of students grows by leaps and bounds, grades for students in these classes are holding their own," (p. 4), and "success with algebra has begun to lead to detracking across the curriculum with more students taking challenging courses in math, science, English, social studies, and foreign languages" (p. 3). Everson and Dunham (1995) add the general observations that more teachers and counselors believe students of color will learn high level math, receive passing grades, and succeed in college. The number of students who self-declare that they are planning to take math courses in high school, go to college, and major in math or math-related subjects also has increased. Everson and Dunham also believe these changes "reflect increases in students' academic self-esteem, and show students at the EQUITY 2000 sites having a good deal of confidence in their academic abilities" (p. 17).

Culturally Responsive Instructional Effects

Like, the number of programs which deliberately and systematically use culturally responsive teaching, and have evidence to document its impact upon African American achievement are few

in number. The ones that do exist have similar features and positive effects. These factors representation a foundations upon which future reforms cab be built, and a baseline against which their quality and effectiveness can be assessed.

The multicultural literacy program described by Diamond and Moore (1995) was initiated in 1990 in three school districts to teach reading and writing to culturally and linguistically diverse students in grades K-8. Its creation was based on the belief that "children of color would view themselves as valued members of society and achieve greater academic success if their life experiences, histories, and language were reflected in what they read, discuss, and write" (Diamond & Moore 1995, p. xii). In addition to multicultural literature and resources (discussed earlier), the program includes whole language and socio-culturally sensitive learning environment components.

The program's socio-culturally sensitive environment component has three key elements: (1) recontextualizing learning (2) alternative social structures and methods of instruction; and (3) the teacher as cultural mediator. Learning is recontextualized by embedding it in functional, meaningful, and relevant life experiences and situations of African Americans, Latinos, European Americans, Native Americans, and Asian Americans. This is done to empower students and improve their performance in reading and writing. It includes using students' own conceptual understandings, knowledge, experiences, attitudes, and values to engage them in reading materials; using multicultural literature instead of basal texts to understand self in cultural context and establish connections with

ethnic and cultural others; and demonstrating how learning as a social process is affected by the entire community (Diamond & Moore 1995).

The alternative learning structures encompass a variety of social group arrangements, such as learning centers, peer interactions, multiple reality-based reading opportunities, and different configurations of cooperative learning groups. Among the more specific instructional strategies used are creating emotionally and academically supportive communities of learners; using multicultural story grammar (setting, character development, problems, actions and events, resolutions, etc.) in read and think alouds; Sustained Silent Reading (SSR); Directed Reading-Listening-Thinking Activity (DRLTA); readers' theater; choral reading; and dramatic interpretation. These strategies stem from the idea that because learning is influenced by students' social and cultural background, it can be best facilitated in socioculturally compatible school contexts and communities (Diamond & Moore 1995).

Teachers in the multicultural literacy program perform three major functions in creating socio-culturally sensitive learning environments for diverse students. They are:

- (1) cultural organizers who facilitate strategic ways of accomplishing tasks so that the learning process involves varied ways of knowing, experiencing, thinking, and behaving;
- (2) cultural mediators who create opportunities for critical dialogue and expression among all students as they pursue knowledge and understanding;
- and (3) orchestrators of social contexts who provide

several learning configurations that include interpersonal *and* intrapersonal opportunities for seeking, accessing, and evaluating knowledge (Diamond & Moore 1995, p. 35).

The creators and facilitators of this multicultural literacy program are convinced that it is effective. Even though they do not present any standardized achievement test scores or course grades to support their convictions, several other indicators are provided. Diamond and Moore (1995) report that students who participate in the program demonstrate:

- More interest and enjoyment in reading multicultural books
- More positive attitudes toward reading and writing in general
- Increased knowledge about various forms, structures, functions, and uses of written language.
- Expanded vocabularies, sentence patterns, and decoding abilities
- Better reading comprehension and writing performance
- Writing longer stories which reflect more clarity and cohesiveness
- Enhanced reading rate and fluency
- Improved self-confidence and self-esteem
- Greater appreciation of their own and others' cultures

Boykin and his colleagues at Howard University has conducted a series of studies which examine the effects of cultural compatibility in teaching African Americans. Together they address several

aspects of what has been identified as the core components of African American culture. Boykin (1983, 1986, 1994; Allen & Boykin 1992) summarizes these as a vitalistic rather than a mechanistic approach to living; a belief that humans and nature are harmoniously conjoined; behavioral expressiveness which integrates movement, rhythm, music, and dance; verve, or high energy and high levels of sensory stimulation; emphasis on emotions and feelings; communal and social connectedness which transcends individual privileges; cultivation of individual expressiveness in personality traits, and an inclination for spontaneity in behavior; preference for oral and aural communication modalities; and social time orientations. Implicit in this composite of cultural traits is the idea that African Americans are "integrated cultural beings." To the extent that schooling responds to all dimensions of this "integration" it will be more effective academically and otherwise for them.

The investigations conducted by Boykin and his associates confirm these assertions. Their research thus far has shown that instructional approaches adapted to four of the nine cultural components improve the cognitive functioning and academic resilience of African American students. These are verve or behavioral variability, movement expressiveness, communalism, and rhythmic functioning. Even though the supportive evidence is not standardized achievement test scores, it includes skills considered essential to successful matriculation in schools, such as task interest, engagement, and persistence. Wayne and Stuck (1979) have shown that engaged time on task improves the reading performance of underachieving children.

Boykin (1979, 1982), Tuck (1985), and Tuck and Boykin (1989) examined how the use of high levels of variety and intensity in sensory stimulation (verve) affects the academic task performance of African American students. Their studies are grounded in the findings of previous researchers, such as Guttentag (1972), Morgan (1990), and Shade (1994), which show that African American students have a clear preference for learning situations that are active, participatory, emotionally engaging, and filled with visual, social, and physical stimulation. The experimental treatments in the Boykin and Tuck studies exposed third, fourth, and sixth graders to different problem-solving tasks presented in unvaried and varied formats. In the unvaried formats children were presented all tasks of the same type before being introduced to tasks of another type. In the varied format, tasks were presented in random order with no more than two of the same kind occurring sequentially. These studies also compared how students from home environments with different sensory stimulation levels reacted to variations in task formats. The results indicated that (1) African American children perform significantly better in learning contexts and tasks with high variability, than in unvaried settings.; (2) children who have high levels of sensory stimulation in their home environments perform better in high variability contexts, while children from low sensory stimulation homes perform the same across varied and unvaried task presentations; (3) both European and African Americans perform better on varied format tasks, but the amount of improvement was substantially greater for African American; (4) the preference of African Americans for varied task formats is not a function of

academic ability, since it was the same for both high- and low-achievers; and (5) African American students engage in more off-task and non-persistence behaviors in unvaried learning formats than European Americans.

Research by Boykin and Allen (1988; Allen & Boykin 1991, 1992) demonstrates that another way to improve the academic performance of African Americans is to coordinate learning tasks with rhythmic music and movement. The low-income first and second grade students who participated in these studies performed better in rehearsals on pairing pictures when the task was accompanied by music, physical actions, and hand-clapping. European American students did better on the tasks in the absence of music and movement. Informal observations provided additional support for these findings. Allen and Boykin (1992, p. 592) noticed that "African American children often became restless and bored during the learning sessions devoid of music and movement opportunity. Their eyes wandered away from the task more often and they tended to attend to their hands and feet more so than to the learning materials and the rehearsals." These results are consistent with findings reported earlier by Guttentag and Ross (1972). They found that when spontaneous and directed physical performances or "acting out ideas" were used in teaching pre-school African Americans they learned concepts like big-small, over-under, and above-below much easier.

It is clear from these studies that action, variety, frequent changes, and high level sensory stimulation in learning formats (that is, "vervistic teaching") increase the "engaged time on task" and task

performance quality of African American students. Conversely, they have a very low tolerance for monotony and similarity in learning tasks. These preferences in performance styles help to explain why traditional classroom instruction and achievement measures, that are marked by passivity, conformity, homogeneity, individual written work, lack of emotional exuberance, and highly restricted ranges of learning activities (Goodlad, 1984) are especially problematic for African American students.

The effects of placing learning for African Americans within "communal contexts" was investigated by Albury (1992). In this study low-income African and European Americans from the same neighborhoods were asked to match 25 words with definitions. After a baseline score was established, the students were organized into 3-member same race groups, and assigned to one of four structural arrangements for completing the next task. Those in the "Individual Criteria" option were told to study alone, and that they would receive a reward if they got 15 of the 25 word-definition matches correct. In the "Interpersonal Competitive" structure students were instructed to study alone, and the member of the team who got the highest score would receive a reward. Students in the "Group Competition" setting were informed that their group was competing with others, and if they scored highest they would be rewarded. The "Communal" learning team was not offered any rewards, but reminded of their shared cultural and ethnic backgrounds, and that they needed to work together, share responsibility, and help each other so that their group could receive a better score. After studying the word list, the students were given a posttest. African

Americans in the "Communal" study option performed better than those in the three other options. In fact, "the black children under the communal condition produced the highest second-test performance and highest learning gains of any group under any conditions in the entire study" (Boykin 1994, p. 133). The "Cooperative" structure was the second most successful learning context for them.

The work of Treisman (1985; Fullilove & Treisman 1990) with African American students at the University of California at Berkeley is a powerful example of how a communal approach to learning can improve student achievement in higher education. The principles underlying his project are fundamentally the same as those employed by researchers whose target populations are K-12 students. Treisman created the Mathematics Workshop Program (MWP), which uses collaborative learning as a means for improving the performance of African American and Latino students in a first semester calculus course (Mathematics 1A) for scientists and engineers. The intervention was modeled after the successful *communal* study habits of Chinese Americans.

Beginning in the 1975-76 academic year Treisman spent three years informally observing how African American and Chinese American undergraduates prepared homework assignments and studied for quizzes and exams. He also interviewed them about their study habits. The African Americans studied for shorter periods of time and alone, separated social activities from academic study, and had a very high rate of failure. At the time Treisman began his observations 40 percent of African Americans received grades of "D+"

or lower in Mathematics 1A. By comparison, the Chinese American students studied for longer periods of time, combined social and study time, had a high passing rate, and received high grades in the calculus course. A closer scrutiny of their habits revealed that the Chinese American study groups enabled and empowered their members by exchanging mathematical knowledge, checking and correcting each other's work, and sharing insights about how they arrived at solutions and proofs for problems. This type of dialogue was a major reason for their high success rate in calculus (Fullilove & Treisman 1990). Like the African Americans in Allen and Boykin's "Communal learning contexts" these students received no motivation for ensuring that all members of the group succeeded other than that derived from their inherent sense of ethnic kindredness and cultural connectedness. Insights gleaned from these observations and conversations were used to design an intervention program to reverse the achievement trends of the African American and Latino students.

The MWP is promoted as an honors program, whose goal is for every participant to earn an "A" grade in first semester calculus. This is a conscious effort to attract high achievers, and students willingness to work to achieve academic success (Fullilove & Treisman 1990). The program recruits first-year students from all ethnic groups who are interested in careers requiring preparation in mathematics. Eighty percent of its actual participants are African Americans and Latinos. In the fall before the academic year begins the prospective participants identified from records supplied by the Office of Admissions and Records are invited to an orientation. It is

designed to convey messages about the prior success of the program, and to assure potential participants that they, too, will be successful. Once enrolled in the program the students are organized into study groups of 5-7 individuals. They work together for approximately two hours twice a week on carefully constructed, and unusually difficult problems. During these study sessions the students are expected to help each other find solutions, understand the principles and ideas on which the problems are based, and share strategies they used to arrive at their answers and proofs. The workshop leaders are graduate students and their function is to monitor the study groups' discussions, determine how well the students have mastered key principles, and assist students in working through any difficulties they encounter with problem solutions. This "practice-with-feedback" process approximates how students are expected to demonstrate their skill mastery on quizzes and examinations.

The achievement effects of the MWP are determined by collecting information on honors level ("B-" or better) and failing ("D+" or less) final grades received in first semester calculus, and by university persistent rates (determined by graduating or being in good academic standing). Data on 646 students who participated in the MWP over nine years indicate that the program is tremendously successful. Regardless of enrollment category, the participating students are "two to three times more likely to earn grades at the higher level than non-MWP students in comparable categories" (Fullilove & Treisman 1990, p. 473). Specific data on students' grades from three distinct periods in the duration of the projects substantiate this general conclusion. In the first five years of the

program (1973-77) an average of 22 percent of African American students received grades of B- or above in Mathematics 1A. Between 1978-82 that averages increased to 54 percent, and to and in 1983-84 to 58 percent (Treisman 1985; Fullilove & Treisman 1990).

Three other significant achievement effects resulted from the MWP intervention. First, even those MWP students assumed to be high-risk for academic failure (EOP participants and special admits), performed better than non-MWP considered to have strong academic backgrounds and potential for college success. Second, the proportion of MWP students from the lowest performance triad of the SAT-M (200-460 scores) who earned grades of B- or above in Mathematics 1A was comparable to that of non-MWP students who scored in the highest triad (560-800 points). Third, the university persistence and graduation rates of MWP African American students was 65 percent compared to 41 percent for their non-WMP peers. The persistence rates of MWP students with the lowest SAT-M scores was greater than those of non-MWP African Americans with scores in the top triad (Treisman 1985; Fullilove & Treisman 1990).

Similar results have been obtained for students at colleges and universities other than Berkeley where the MWP has been implemented. Among these are the University of California campuses at Los Angeles, San Francisco, and San Diego, and California Polytechnic at Pomona. The program also has been adapted and achieved comparable levels of success for high school students (Fullilove & Treisman (1990).

Slavin (1987;1995) and Stevens and Slavin (1995) report that cooperative learning generally has similar positive effects for

students across ethnic, gender, and ability groupings, achievement measures, and intervention scale (classroom or school; short or long term). These include more inter-ethnic group social interactions and friendships, increased academic achievement in a variety of subjects, improved academic self-concepts, and higher levels of confidence and efficacy for students of color. Results from Steven and Slavin's two-year study of five cooperative elementary schools in suburban Maryland, involving 1,012 students in grades 2-6 indicate that cooperative learning works as well at the school level as in individual classrooms. Students in these schools out-performed their peers in traditional schools on reading vocabulary and comprehension, language expression, and mathematics computation as measured by subtests of the California Achievement Test (CAT), Form C. They also had more friendships and better peer relations. Because these data were not disaggregated by ethnic groups it is impossible to discern the levels of African American achievement .

When methods of culturally-responsive or contextualized teaching for African American students are extended to the school building or a total program level, they are named "Afro- or Afrocentricity." Several classes and/or academies based on these pedagogical techniques have been established in schools districts throughout the U. S., such Detroit, Baltimore, Atlanta, Milwaukee, San Diego, Minneapolis, and Seattle. Most are too new to have accumulated any definitive descriptions of their programs, and systematic evaluative data on their achievement effects.

Indicative of these trends is the information supplied by the Minneapolis Public Schools on their Afrocentric Educational Academy

(AEA). It was initiated in Fall 1991 to "remediate the chronic pattern of relative underachievement of African American students" (Kelly, April 10, 1996, np). Its more specific goals are to improved *academic achievement* and higher *standardized test scores* in math, reading, social studies, and the arts; *cultural socialization* by focusing on African American students' cultural heritages and values as essential sources of contextual learning; and *individual development* by affirming and enriching the creative self-expression and self-reliance of African American students. Claims to the effect that the AEA has generated "statistically significant academic gains" are not substantiated with evidence (*Afrocentric Educational Academy*, nd, np. Mimeographed).

The "Songhai Empire" at Leeds Middle School in Philadelphia, the Afrocentric Enhancement, Self-Esteem Opportunity Program (AESOP) in Dade County (Miami, FL) Public Schools, and the Coleman School in Baltimore do have evidence to support their beliefs that Afrocentric education improves achievement. The Songhai Empire, an "African centered program," was initiated in 1992 for the eighth graders at Leeds. According to Foster (1994, p. 27), a teacher in the program, the "Songhai Empire believe (sic) that history and culture serves (sic) the purpose of survival and constructive growth for the African people and thereby the entire world." It represents a synthesis of traditional African values and analysis of modern social, political, and economic realities in preparing students to create a better future. The program is designed to "produce excellence in the academic achievement of African American students while building strong self-esteem and developing critical thinking skills" (*The*

Songhai Empire, nd, np). In addition to teaching African heritage, the curriculum at Leeds Middle School emphasizes math, science, and technology. The African centeredness of the eighth grade curriculum is symbolized by the following motto which all students must learn and recite daily:

We are descendants of great African fathers and African
mothers

We will have the pride, strength, and power of Songhai
To help us to do the work we must do

Because we must understand

I am because we are, and we are because I am

When I shine the nation shines, and when the nation shines
we all shine

The Songhai Empire program has achieved some remarkable success in a very short period of time. During its first year of existence the students improved 10 percent on their city-wide test scores in mathematics and reading; the number who participated in the Carver Science Fair increased from 33 in 1991 to 165 in 1992; the number of students with A/B GPAs after being a part of the program increased in math by 63 percent, English/reading by 17 percent, science by 81 percent, and social studies by 50 percent; and disciplinary infractions (such as suspensions, offensive language, repeated violations, and assaults) decreased by 80 percent. The following academic year (1992-1993) no disciplinary actions of any kind occurred! (*The Songhai Empire*, mimeographed, nd).

AESOP is a three-year pilot program which began in the 1992-93 school. It is designed to serve African American students in

Chapter 1 schools. Its major goals are to improve the academic achievement of males through teaching the history, culture, and achievement of African Americans, increase their ability to think critically and their self-esteems, and empower them with a sense of personal and social responsibility (Parallel programs with similar "centric" goals exist for Latino--the Ethnic Studies Promote Achievement and Nurture Opportunities to Learn [ESPANOL], and Haitian students--the Haitian American Interdisciplinary Teaching Initiative [HAITI] in the Dade County Public Schools. No evaluation data are yet available of either of them). AESOP is implemented in 27 schools--6 elementary, 11 middle, and 13 high. At least 287 students had been involved in the program at the end of its first three years of existence. In the elementary schools AESOP is a part of the social studies curriculum; in middle schools it is incorporated into the academic core subjects (language arts, social studies, mathematics, science); in the high schools it is a co-curricular project which operates in conjunction with the schools' activities programs. Participating students are assigned to AESOP centers in these schools for three days of the each week where they receive Africentric instruction. Activities for the curriculum are selected from three primary sources. These are the Portland (Oregon) Public Schools' *African American Baseline Essays*, the *Self-Esteem Through Culture Lead to Academic Excellence* (SETCLAE) project, and the *Learning Activities Packets* (LAP) produced by the Dade County Public Schools.

At the end of the three-year pilot the evaluation data of AESOP, which was limited to the four initial pilot schools, indicate that the

program had met two of its four student achievement goals. The participating students' critical thinking skills were assessed by the nonverbal subtest of the Cognitive Abilities Test (COGAT). They had improved by eight (8) percentile points over the duration of the project. Changes in self-esteem were assessed by the McDaniel-Piers Young Children's Self-Concept Scale (MPSCS). The scores of the AESOP students increased significantly, with the changes being greatest for those who had been in the program the longest. No significant improvements occurred in school attendance, suspensions, or teacher ratings of student behaviors. Consequently, the goal of improving students' social skills and responsibilities was not met. The students' mathematics applications scores on the Stanford Achievement Test remained constant, but were better than others who did not participate in the program. Their reading comprehension scores declined in proportions similar to the non-participating students. Despite these mixed results, most of the teachers, administrators, and parents surveyed feel AESOP is beneficial and should be continued. For example, of the 33 teachers who completed the survey 87% felt the program benefitted students, 91% saw it as a positive addition to the school's curricula, and 88% thought it should be continued (Abella 1995).

Lipman and her associates (1995) conducted an ethnographic study of the Coleman School in Baltimore. The results show that its Afrocentric curriculum and culturally responsive teaching emphases are having positive effects on students' academic achievement. The total African American student body bustles with activity and cultural pride. Evidence of their ethnic group's history, culture, and

contributions are reflected throughout the school's philosophy, curricula, and decor. The students are surrounded by expectations for and models of excellence; they are constantly reminded that they can and will achieve academically without sacrificing their cultural identity. The school's program demonstrates a strong belief in community connections, and collective responsibility for students' academic achievement. A family-style of relationships prevade classroom teaching and interactions among students, and between students and teachers.

This "conspiracy of caring," as the principal describes the school's ambience, mission, and actions, has produced significant improvements in student performance. During the 1992-93 school year, Coleman's first graders placed first on the Comprehensive Test of Basic Skills of the 22 schools studied in detail by the Urban Education Project at Research for Better Schools. Second graders ranked second among these schools in math and reading, and fourth graders scored fourth in reading and fifth in math. When Coleman's students' performance was compared to the 116 schools in the Baltimore City School System, the first graders scored fifth in reading and sixth in math; the second graders scored third in math and reading; and the fourth graders scored 21th in reading and 29th in math.

Hudley (1995) applied the "goodness-of-fit" principle which underlie culturally responsive teaching in studying a group of 6-8 grade African American males in Southern California who participated in a specialized, self-contained Afrocentric learning environment. The goodness-of-fit principle contends that "when a

person's behaviors, abilities, interests, and motivations match the role requirements, expectations, and rewards available in a given environment, personal adjustment should be high and levels of stress in that context should be minimal" (Hudley 1995, p. 41). Translated to the framework of this report this means that if school curriculum and classroom instruction are congruent with the cultural values and orientations of African American students, they will perform at higher levels on all measures of achievement. Half of the students who participated in Hudley's study were taught using Afrocentric, culturally relevant instruction and half were not. During one entire school year information about African American history, culture, contributions, and sociopolitical issues was incorporated into the students' social studies, science, math, and language arts courses. For example, the students read literature by African American, African, and Afro-Caribbean authors in language arts, and used statistics about African Americans' differential income, longevity, and population distributions to practice mathematical problem-solving and calculations. These curricular emphases were complemented with teaching techniques which emphasized cooperative and collaborative learning, higher order thinking skills and critical analysis skills.

To determine the effects of these interventions, Hudley had the students complete the Self-Perception Profile of Learning Disabled scale to assess perceptions of competency and self worth. This scale provides information on ten different competencies---general intellectual ability, global self-worth, reading, spelling, math, writing, athletics, social acceptance, physical appearance, and

behavioral conduct. The Social Support Scale for Children was used to determine students' perceptions of the support they receive from parents, teachers, classmates, and close friends. The results of the study indicate that on all measures used, the students in the Afrocentric class performed better than their peers. These achievements included higher grade point averages; higher perceptions of their teacher as being fair, caring, helpful, and supportive; and higher perceptions of their classmates as friendly, attentive, and accepting of their ideas. The Afrocentric class students also perceived general intellectual ability and social competence to be their greatest assets. They did not they think their consistently displayed high academic self-concepts interfered with or were harmful to their social competence. The comparison group of students identified neither of these as a strength. Hudley believes these improvements occurred because the Afrocentric program "created a cadre of academically confident young men who supported one another's achievement strivings" (p. 53). Their mutual support of each other's academic competence stands in stark contrast to critics who argue that peer pressure among African Americans, and Afrocentric curriculum and instruction are counter-productive to academic performance. The reverse was true in this study---they facilitated the students' academic, self-worth, motivational, and social improvements.

Communication Styles

Another aspect of culturally responsive teaching and its effects on student achievement which has been studied rather thoroughly is communication styles, or what some researchers refer to as "sociolinguistic facilitation." The units of analysis include both verbal and nonverbal, and syntactical and discourse features of communication. Turn-taking rules, listening-gaze behaviors, questioning strategies, response or wait-time, and how thoughts and expressions are sequentialized are the specific variables most frequently examined. Most of this research involving African Americans and other students of color focus on characterizing the salient aspects of their communication styles, instead of collecting data on how adapting classroom interactions to accommodate them affect specific kinds of academic achievement. The few studies and instructional programs available of the second kind tend to produce positive results. However, these are most often reported as increases in the quantity and quality of participation in classroom discourse. Virtually none of the research present evidence of these improvements in the form of course grades or standardized test scores.

Research conducted by Foster (1989) provide support for the assertion that when African American students' cultural styles of communication are accommodated by teachers, they participate more in classroom discourse, have longer attention spans, devote more time to academic tasks, and exhibit better problem-solving and thinking skills. She did an ethnographic analysis of an African

American teacher's verbal interactions with her community college students. Foster observed that the teacher's use of African American cultural communication nuances (vocabulary and discourse styles more so than syntactical features) and the students' performance were positively related. As the teacher employed more cultural communication techniques to make the content of the subject meaningful to the students, the students were able to understand the concepts easier, recall more factual information with greater accuracy, and were more enthusiastic and confident about learning.

These findings are consistent with those reported earlier by Piestrup (1973), Hall, Reder and Cole (1979), and Smith and Lewis (1985). The first grade African American students Piestrup observed, who were taught by a teacher using "an artful instructional style" achieved higher scores on standardized reading tests than those taught in a more conventional style. The "artful" style of teaching included many of the attributes Pasteur and Toldson (1982), Boykin (1986), Gay and Baber (1987), and Smitherman (1994) later identified as characteristic of African American culture. They include dramatic, rhythmic, verivistic, evocative, personalized, conversational, and active-participatory discourse style; motion, movement, and body gestures; the pace and rhythm of speech; and metaphoric imagery. Hall, Reder, and Cole's research demonstrated that dialectism can facilitate, rather than obstruct academic achievement. The dialect-speaking four year old African American participants enrolled in a Headstart program recalled more details with greater accuracy when they retold stories in cultural dialect than in standard English. Their performance in Black English

Vernacular (BEV) was equivalent to that of the European American children tested in Standard English. Their performance suffered less in Standard English than White children's attempt to perform in BEV. This finding attest to how the dialect of presentation in teaching can affect the task performance of students.

Franklin and Fulani's (1979) research produced similar results on mastery of cultural content. The students they studied performed better on a word categorizing task when the words reflected their own cultural experiences. Smith and Lewis (1979) found positive associations parallel to those of Franklin and Fulani between the language schemas of African Americans, reading content, and comprehension, interpretation, and recall of factual details. These skills increased as African American students read stories about characters like themselves, and situations similar to their own life experiences.

Lee and Slaughter-Defoe (1995 examined the effects of "schematic similarity in written and verbal discourse" on comprehension and fluency within the context of the narrative storytelling styles observed among African American and European American students. African Americans tended to use a topic-associative or chaining style to tell their stories, while the European Americans' showed a preference for a topic-centered style. These preferences also have been validated by other researchers studying children, among adults, and within the formal literature of their respective respective groups (Goodwin 1990; Dyson & Genishi 1994; Lawrence Lightfoot 1994). Lee and Slaughter-Defoe suggest that it is important for techers to

understand how culture affects narrative style because "children's sense of genre influences how they approach writing tasks and what story grammars they use as templates for comprehending stories" (p. 358).

Two important messages derived from these studies for improving the achievement of African American students. First, adapting both the substantive and process components of classroom discourse to match the verbal, non-verbal, and written aspects of their cultural communication styles can have positive effects on academic achievement. Second, developing proficiency in more than one communication style does not distract from or interfere with students' academic abilities. Consequently, bilingualism and bi-dialectism, along with bi-culturalism, should be essential components of culturally responsive curriculum and instruction for African American students.

Design Principles

Several general principles for improving the achievement of African American students emerged from the programs, practices, and research studies summarized above. The experiences they reflect and promote cut across students' age, socio-economic strata, gender, residential location, ability, and school level. Invariably, they reaffirm the theoretical ideas of culturally responsive, Afrocentric curriculum and instruction.

These design principles represent the optimum learning environment for African American students. Certainly, many African

American children and youth have achieved academically, socially, and personally without the benefit of culturally relevant learning environments, and many others will continue to do so. Their success has been mostly in spite of curricula and pedagogy that are often culturally irrelevant and inconsistent. If these were replaced with ones that are culturally relevant, consistent, and responsive greater numbers of students will achieve success, and even at higher levels. Ideal learning environments for African American students, then, are governed by the following principles (the order of importance is not depicted here).

Principles Related to Curriculum Content

- Curriculum content and illustrative examples in all subjects reflect African American culture and experiences. Because students learn best when they can see themselves and their culture reflected in instructional materials, teachers use a wide variety of information, books, films, posters, instructional games, and artifacts in which many different cultural images, perspectives, experiences, and contributions of African Americans are portrayed.
- The contributions of immediate and extended family members to the educative process are sought at all times. Having African American family members contribute to classroom knowledge and processes is invaluable. Since greater numbers of African American students are entering United States schools at a time when the greater numbers of teachers are European American females who do not necessarily know their cultural and background

experiences, the cultural knowledge and instructional assistance these individuals can provide are of paramount importance.

- Curriculum content is relevant to students' life experiences and developmental stages. Teachers are careful to acquaint themselves with African American culture and history, and readily incorporate this information into curricular content.

Furthermore, achievement standards, classroom instruction, and performance tasks and assessments are free of cultural biases, and accurately reflect the contributions of African American people in U. S. society.

- The contributions and careers of African Americans in a wide variety of disciplines are demonstrated. Teachers design opportunities for accomplished professionals in areas where they are few in number to be visualized and accessed by students. This is accomplished by adding information generated from new research on African American history, life, and culture to curriculum content, using non-traditional reference sources, and including the personal experiences of individuals from a wide spectrum of careers.

- Information about African American history, culture, and experiences taught in different subjects is well "grounded" and significant. The issues, events, experiences, and individuals included in the school curricula are important and authentic. They also are carefully selected, and necessary background information is provided to making them most meaningful.

Principles Related to Pedagogy

- Learning situations are integrative and provide opportunities for students to active and participatory. Rather than making intellectual, affective, and action types of learning separate and discrete, combining them work best for African American students, as do active engagement rather than passive acceptance, and making explicit the connections between classroom learnings and their lived experiences.
- Students work cooperatively in groups. As African American students' cultural predilection is toward the group, this mode of instruction tends to work very well for them in both small and large formats. Where there is competition, it is between groups or teams of students instead of individuals.
- Develop feelings of community, kindredness, responsibility, and reciprocity among student, and between students and teachers in the classroom. In such an instructional environment students and teachers care, respect, trust, and help about each other. They understand that successful teaching and learning are co-dependent.
- Sensitive attention to the ethnic identity struggle in many which African American students engage because of the persistence of racism in the United States. All people strive to achieve an ethnic identity. This task is made difficult by the lack of attention to this developmental process in schools, the persistence of racism in society, and its denial in schools. Teachers who incorporate sensitivity to this developmental task and the

societal inequities related to ethnicity into their instruction are more successful in helping students develop academic, personal, and social competence.

- Teaching philosophy recognize the importance of the oral tradition in communication, use it in classroom instruction, and develop it in students. African Americans excel in oral communication. This mode of communication has been valued traditionally and is encouraged by many members of the African American cultural community. Teachers who want to access and facilitate the strengths of African American students, complement written communication with oral speech, and help students develop skills to do likewise.

- Students are allowed freedom of expression and the use of their discourse styles, even when they differ significantly from their peers and teachers of other cultural groups. For example, the physical expressiveness, volume (vocal amplification), speed, quantity, and aesthetics of African American speech behaviors are encouraged.

- Students are rewarded for drawing from their cultural experience in academic endeavors. Just as curriculum content is reflective of African American culture, pedagogy encourages students to build upon their cultural experiences in the design and creation of school projects, and in the practice and demonstration of academic skills. Teachers also incorporate cultural and personal themes, concerns, issues, and events into the academic work of African American students.

- Bi-dialectism and bi-culturalism are encouraged.

When appropriate teachers encourage African American students to use their cultural frames of reference and discourse styles in learning situations. They also use them as tools to expedite instructional relevance and effectiveness.

- There is variability in learning structure, organization, pacing, and stimulation. Educators know that African American students often come to the learning encounter with cultural orientations, values, background experiences, and learning styles that are very different from what are considered the "norms" in schools. They, therefore, tailor learning experiences to the specific cultural needs, perspectives, and styles of African American students.

- Reduce the procedural incompatibilities between African American natal cultural performance styles and school preferences. Teachers employ communicative, instructional, interactional, and motivational techniques that are consistent with African American culture. As the school's structure and environment are better aligned with the culture of African American students suspensions and other disciplinary actions taken against these students decline, and their intellectual performance, time on academic tasks, and social adjustment to schools increase.

- Academic success, cultural competence, social responsibility, and political efficacy are emphasized. Achievement is greater than high test scores and grade point averages. Becoming successful in life for African Americans require a complex and multidimensional set of technical, social, personal,

moral, cultural, political, and vocational skills. Therefore, indicators used to determine how well schools are preparing these students for life's challenges, and their mastery of the skills taught must be varied and comprehensive.

- Teachers, counselors, and administrators have high expectations for African American students. These educators demonstrate positive attitudes about the capabilities of African American students, and have high expectations for high levels of personal and academic performance. They focus on what these students have and can do, rather than emphasizing what they don't have and can't do.

- Peer and cross-age tutoring are appropriately employed. Because African Americans, like other students, often respect and respond to the views, opinions, and precedents of their age-mates over those of teachers, peer tutoring is often used, and in a variety of ways. Additionally, students, along with teachers, are encouraged to use concrete examples from their personal and ethnic group's cultural experiences to connect learning with living, and thereby make it more meaningful.

Principles Related to Content and Pedagogy

- Culturally relevant curriculum designs and teaching strategies are used in concert to improve student performance. While each of these can be implemented alone, and have positive results, together they are more powerful and effective than separately.

- Multiple approaches, level, and types of curriculum designs and instruction strategies are used. African American students are holistic learners, respond well to multiple, simultaneous sensory stimulation, and respond well to variety and frequent changes in learning situations. To build upon these preferences and the potentials they offer for improving achievement require curriculum and instruction that are interdisciplinary and multisensory.

- Teaching and learning acknowledges the pernicious nature of racism, and prepares students to take appropriate action to resist and combat it. Teachers expose the incipient nature of racism, and demonstrate this knowledge through their curriculum designs and instructional techniques. They create a classroom atmosphere for, and assist students in generating strategies for confronting and eliminating racism.

- School leaders and classroom teachers are unequivocal in their public affirmation of and commitment to improving the academic achievement of African American students. School districts committed to increasing the achievement of African American students exhibit confidence in the work that they do to promote and achieve this commitment; they proudly and assertively announce and display it publicly. Mission statements and "images" that address the achievement of African American students are displayed on the walls of district offices, school buildings and classrooms. Other public relations initiatives also are pursued aggressively to convey these commitments to a wide range of public constituents, such as the media, community

members, parents, public officials, and representatives of business and industry.

- Lesson designs address the social stressors that specifically relate to African American children, or inordinately affect them. Racism, poverty, marginalization, powerlessness, and European American cultural hegemony have inordinate negative effects on African American children and adults. Culturally responsive curriculum and instruction do not ignore these realities. Instead, they create opportunities for students to envision cultural, social, political, and educational equity, and develop skills to eliminate all forms of oppression and inequality.

- Teachers and counselors provide opportunities for students to explore and develop skills for a wide variety of high status careers. Curricular programs and instructional techniques help African American students to identify their potentials for and develop their abilities in these career areas such as mathematics, science, law, medicine, politics, and computer science..

- Teachers, administrators, policy-makers, and other school personnel continually seek opportunities to increase their competence and confidence in implementing culturally responsive curriculum and instruction. Many educators still do not have adequate knowledge about how cultural values, perspectives, and experiences affect the behaviors of African Americans in learning situations. Nor, do they have the necessary skills to integrate these into their curriculum and instruction . Therefore, professional staff development which develop these competencies is an essential part of the master plan for improving

the academic, personal, and social achievement of African American students.

Conclusion

The results of this search for the effects of culturally responsive curriculum and instruction on African American students' achievement are both discouraging and encouraging. It is almost unbelievable that the review of published literature and the survey we conducted produced such a small data pool. Often programs which claimed success in improving achievement, were vague in describing their content and operations, and offered little or no evidence of actual academic achievement. Much of the proof provided to substantiate success stories was increased participation in certain subjects, and attitudinal, impressionistic, and observational insights rather than increases in standardized tests scores, or improved grade point averages.

Yet, the few programs that did provide evidence show positive effects of culturally responsive curriculum and instruction on achievement. African American students exposed to these types of interventions have higher enrollment rates in advanced math and science courses, greater feelings of self-confidence and academic efficacy, better social adjustment in schools, and higher scores on standardized tests. This is encouraging news but it does not go far enough. For example, most culturally responsive pedagogy takes place as "special projects," "additive efforts," and "research experiments" instead of being "regular and routine" classroom

functions. That is, it is a supplement to existing curricular and instructional programs, not an integral part of them. The math and science projects are particularly graphic examples of this trend. Most of them even operate outside of the official school day, on Saturdays and in the summer. Nor is the Webster Groves Writing Project or the Multicultural Literacy Project "naturalistic infusion" programs. Both are "special programs" for "at-risk" students. The research studies conducted by Wade Boykin and his associates, which demonstrate that when classroom instruction is matched to the cultural styles of African American students perform much better in school, are "experimental studies." The Afrocentric programs all occur in special classes and/or special schools.

The most telling message of all which emerged from these research studies and program summaries is that much more remains to be done before unequivocal proof is available on the positive effects of culturally responsive curriculum and instruction on African American students' achievement. However, we continue to believe that there many more programs out there somewhere with this proof than we were able to identify. The failure to locate them may have been more a limitation of our methodology than their non-existence in fact. Most often teachers are too busy teaching to write about and publish the results of their efforts. The timing of our survey may have been a deterrent to a high response rate, occurring as it did between late March and the end of April. We may not have directed our surveys to the individuals and offices in school districts and state departments of education most familiar with the kind of information we requested. They may not have forwarded the inquiries to the

appropriate personnel in an expeditious manner, or not at all. Or the requests simply got buried in the bureaucratic shuffle of complex educational systems and power structures.

Another possibility which may explain why we receives so few responses to our requests for information has to do with the nature of instruction. What is happening in classrooms which positively affects the achievement of African American students may be of a character that is not easily and readily captured in a few written statements, or by traditional measures, such as test scores. If this is the case, our way of soliciting information would not have tapped this achievement because teachers and other school personnel may not have had the time or inclination to write detailed descriptive of this "contextual or situational performance achievement." If we had been able to visit classroom, observe teachers in the act of teaching, and watch students demonstrate their skills, we could have accessed these otherwise unrecorded successes, and expanded our data pool considerably.

Whether or not any or all of these possibilities did in fact occur, future efforts to do what this project attempted should learn from our successes and failures. We strongly believe that classroom observations would compensate for many of the limitations in the methods we used. We also believe that, although the data base is small, the results are consistent enough to be instructive for school leaders who are designing reform initiatives to improve the achievement of African Americans. Culturally responsive curriculum and instruction do work in that they positively affect different types

of student achievement---academic, social, personal, school persistence, time on task, and feelings of resilience and efficacy.

The need to make schooling more successful for greater numbers of African Americans is so crucial that educators cannot afford to wait for indisputable proof of success before engaging in reform. Instead, they must build upon the lessons and directions offered by programs and practices like those we summarized in this report, use them to guide their pursuits, and become more diligent about recording, documenting, and disseminating the results of their efforts. By so doing everyone will benefit---the students, other educators, the profession, and ultimately society. This sharing is in the spirit of a principle already rather well established in educating African American students. It takes a whole community of individuals, representing diverse skills and positions of influence, and working in personal, professional, and cultural concert with each other, to make education a meaningful, engaging, and successful enterprise for African American students.

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