DOCUMENT RESUME

ED 340 289 HE 025 140

AUTHOR	Nettles, Michael T.
TITLE	Assessing Progress in Minority Access and Achievement in American Higher Education. ECS Working Papers: State Policy and Assessment in Higher Education.
INSTITUTION	Education Commission of the States, Denver, Colo.
SPONS AGENCY	Fund for the Improvement of Postsecondary Education (ED), Washington, DC.
PUB DATE	91
NOTE	43p.
AVAILABLE FROM	ECS Distribution Center, 707 17th Street, Suite 2700, Denver, CO 80202-3427 (Stock No. PA-91-1: $6.00 each plus postage and handling).
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Academic Achievement; *Access to Education; College Outcomes Assessment; *Educational Assessment; *Educational Attainment; Educational Quality; Enrollment Projections; *Higher Education; Institutional Characteristics; Institutional Environment; *Institutional Evaluation; *Minority Groups; Program Evaluation; School Holding Power; Student Characteristics

ABSTRACT

This paper advances the perspective that more frequent and comprehensive assessments, and more frequent and complete evaluations of college and university programs, are essential if colleges and universities are to improve minority access and achievement. Without denying the need to create new sources of data and information for measuring achievement in higher education, this study relied upon existing sources, many of them under-used. In order to begin assessing the pool of minority college candidates, forecasts of future enrollments and characteristics of prospective students are reviewed including the current growth rate of minority populations and current indicators of various groups' educational preparedness. A discussion of institutional climate (student attitudes, behaviors and experiences and institutional programs, practices and policies) and its contribution to student and institutional outcomes are also discussed with data indicating that these factors consistently play an important role in minority success. A further discussion of the measurement of student outcomes and their use in assessment is included. A conclusion examines the tension between greater access and college and university quality and the place of assessment overall in institutional action to increase minority success in higher education. Included are eight tables and 60 references. (JB)

State Policy and Assessment in Higher Education

ecs working papers

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Published by the Education Commission of the States

ASSESSING PROGRESS IN MINORITY ACCESS AND ACHIEVEMENT IN AMERICAN HIGHER EDUCATION

ASSESSING PROGRESS IN MINORITY ACCESS AND ACHIEVEMENT IN AMERICAN HIGHER EDUCATION

by

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This paper is part of an Education Commission of the States series on Assessment in Higher Education, written in 1990-91. The project was funded by the Fund for the Improvement of Postsecondary Education (FIPSE).

Copies of this book are available for $6.00 from the ECS Distribution Center, 707 17th Street, Suite 2700, Denver, Colorado 80202-3427, 303-299-3692. Ask for No. PA-91-1.

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ACKNOWLEDGEMENTS

First, I would like to acknowledge and thank two of my very wonderful and talented assistants, Audrey Williams and Tammy Benshoof, who provided invaluable assistance in producing this paper. Audrey Williams, a graduate research assistant, devoted many hours to reviewing and gathering data and information to enrich the paper. She also provided valuable critiquing and reactions to ideas and analyses. Tammy Benshoof's organizational and clerical skills and positive and supportive attitude were very important in producing the paper. She typed several versions of the paper, organized the peer review, coordinated the work toward timely completion and made sure that I stayed on schedule.

I would also like to thank James Ratcliff, Patrick Terenzini, Michael Olivas, Daryl Smith, Arnold Mitchem, Esther Rodriguez, Ellen Chaffee and Monique Weston Clague for their critical review of this paper. They provided candid and constructive criticisms toward improving the final draft. Although these colleagues were very helpful, the responsibility for all of the contents of the paper belong with me rather than to any of them.

I am also very grateful to Joni Finney of the Education Commission of the States who invited me to write this paper and who provided the support and encouragement to get the job done. For whatever reason Joni chose me to write this paper, I am appreciative for the opportunity to analyze many of the educational challenges facing minorities in America and to think of ways that assessment can be used to help educators expand and enrich their access and learning opportunities.

ABSTRACT

This paper advances the perspective that more frequent and comprehensive assessments, and more frequent and complete evaluations of college and university programs, are essential if colleges and universities are to improve minority access and achievement. Progress depends largely upon how well institutions take stock of their progress and use the findings to plan future progress. Key indicators, characteristics of minority population groups and features of intervention programs that need to be included in assessments and evaluations are discussed, as are many of the key policies and programs that need to be evaluated.

While there is often a need to create new sources of data and information for measuring achievement in higher education, this paper relies upon existing sources, many of them underused. These sources include population census; standardized achievement tests; student transcripts; surveys of student attitudes, opinions, behaviors and performance; surveys of alumni opinions and achievements; and government documents. Each of these is helpful in different ways for gaining insight and understanding, setting goals, measuring progress and developing strategies for achieving greater and more meaningful and effective diversity at all levels and types of colleges and universities.

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INTRODUCTION

Assessment has become an essential component of America's educational policy development and of internal planning within schools, colleges and universities. Because President Bush and the 50 state governors have, for the first time in history, set national goals, measuring progress has been elevated to a higher status than ever before. In the present public policy environment, assessment is viewed as the primary means of ensuring that national and state goals are achieved. Periodic assessment is also a way to ensure that public and private schools, as well as colleges and universities, are held accountable for student achievement, which is the centerpiece of national goals. Similarly, individual school, college and university officials are finding assessment necessary for measuring progress toward achieving their own institutional goals and for informing various audiences about their status and progress.

Increasing minority participation and achievement in the nation's colleges and universities are issues of national and state, as well as institutional importance. There has been too little progress in enrolling and employing minorities in higher education, and the progress made has been too gradual. For example, despite representing over 12% of the U. S. population, African Americans were only 9.2% of the college enrollment in 1980 and 8.7% in 1989. Despite more than a 50% increase in the Latino population, Latino college students made up only 4% of college enrollments in 1980, increasing to 5.2% in 1989. African American faculty constituted only 4.5% of the nation's college and university faculty and Latinos only 2%. In addition, African Americans represented only 3.8% of the doctoral degree recipients and Latinos 2.7% of earned doctorates in 1989.

Imaginative strategic planning and new ideas and efforts are needed to make more progress. This paper examines ways that assessment and evaluation can be used to increase awareness and enhance plans and strategies for improving minority participation and achievement in higher education. Assessment and evaluation are important for clarifying issues, identifying models of success and reasons for failure, examining the impact of existing policies and strategies and providing the rationale for establishing new policies and strategies.

Assessment and Minority Students

Perhaps the most common notion of educational assessment is measurement of student aptitude or cognitive development and achievement, but assessment can and should involve much more. Student testing is important, but what is needed is more complete diagnoses that measure academic progress and performance as well as opinions, attitudes and behaviors and the impact that policies and programs have upon student and institutional achievement. Measures of cognitive development typically provide a report that reveals enormous gaps between minority and majority students. Trend analyses usually reveal little, if any, progress being made to eliminate the gaps.

Equally important are:

- Evaluations of the progress of college and university efforts to increase minority representation through affirmative action and other types of interventions
- Evaluations of minority students' social involvement and academic performance
- Measurements of their attitudes, behaviors and personal development
- Measurement of changes that colleges and university officials make to improve environments to accommodate the needs of minorities
- Evaluations of the strengths of policies and programs and other interventions to help improve the plight of minorities attending college
- Evaluations of integration of people of various backgrounds into forming a mainstream of campus life and community

The purpose of assessment in this context then is to generate the data and information needed for setting goals, monitoring and reporting progress toward achieving goals and identifying the processes that lead to positive outcomes. With regard to minorities in American higher education, this means:

- Setting goals and measuring progress toward increasing minority students' preparation for entering and performing in college
- Improving the practices used by colleges and universities to identify and admit minority students and to predict and monitor their success in college
- Identifying the financial and other supports that minority students need to enroll, persist and progress through college
- Identifying the characteristics and factors about colleges and universities that contribute to enrolling and retaining more minority students through graduation
- Improving the academic performance (as reflected by grades and test scores) of minority students who enroll
- Improving the quality of the experiences minority students have while they are enrolled in college
- Ensuring that minority students who enroll and persist through graduation are adequately prepared for their post-baccalaureate careers and educational experiences
- Increasing the supply of graduate-trained minority students
- Increasing minority representation and achievement on college and university faculty and administrations

With regard to assessments of programs and policies, the most common practice is to evaluate the impact of such initiatives as admissions policies and programs, financial aid and scholarship programs, summer enrichment programs, tutorial and retention programs, programs designed to increase student involvement and achievement in education and other special interventions affecting student access, retention, performance and graduation.

This paper examines national data and information that provide the best available evidence regarding these important issues. It also frames some questions and proposes additional evidence that is needed. The raised questions might appropriately be addressed by state systems and institutions in order to increase the progress of minorities in higher education and the success that education institutions experience in attracting and graduating well-qualified minority students.

ASSESSING THE POOL OF ELIGIBLE STUDENTS

Changing U.S. Population Demographics

A logical and important way to begin assessing the pool of minoirty college candidates is by forecasting future enrollments and understanding characteristics of prospective students. The U. S. population census includes data on the size and geographic distribution of prospective minority students and employees, as well as the demographics (age, ethnic, sex and socioeconomic status distribution) of the population. Such data can be useful for increasing awareness and understanding about the population and are essential for setting goals.

Recent U. S. census data reveal that the nation is experiencing an unprecedented change in the characteristics of its population. Since the 1980 census, minorities have represented a steadily growing proportion of the population. The large growth reflected in the 1990 census was due primarily to the relative growth of minority birth and immigration rates between 1980 and 1990, particularly among Latinos and Asians. Table 1 illustrates that between 1980 and 1990 the total population of the United States increased by 9.8%, while the African American and Latino populations increased at a higher rate — 11.9% and 53%, respectively. The white population increased at less than half the rate of the population as a whole, 4.4%. Table 1 also shows that during the same time the population growth of U. S. citizens called "all other" was more than six times the overall population growth rate, at 61.6%. This reflects the dramatic increase in the Asian population of the United States, particularly southeast Asian immigrants. Minorities were 20.5% of the population in 1980, increasing to 24.4% in 1990. Of the minority population, African Americans represented 56.4% in 1980, but only 48% in 1990.

Further analyses of population trends reveal that while minorities represented around 24.4% of the United States population in 1990, minority youth made up more than 30% of pupils enrolled in kindergarten through 12th grade, up from 24% in 1980, according to the National Center for Education Statistics (NCES). This representation of minority students — nearly one-third more than their representation in the general population — suggests not only that future generations of the U. S. population will include more minorities, but also that changing demographics will have a greater immediate impact upon the nation's educational institutions than any other sector of American society. It also suggests that the success of the nation's schools in educating minority youth will determine the quality of American life, particularly the make-up of its work force and colleges and universities, in the decades to come. Today's minority elementary school students will compose a much larger share of the work force and of college and university enrollments from the year 2000 and beyond than minorities represent in today's work force and higher education institutions.

The percent that each minority group represents of the elementary and secondary school population increased from 1976 to 1986, while the number and proportion of white students declined. White enrollment in elementary and secondary schools declined from 43,714,000, representing 76% of the total in 1976, to 41,156,000, representing 70.4% in 1986. The representation of African American students increased from 15.5% to 16.1%; Latino

Table 1

U. S. Population Growth by Race 1980-90

	White	African American	Latino	All Other	Total
1980	180,256	26,104	14,609	5,577	226,546
% of Total Population	79.6	11.5	6.5	2.5	
1990	188,128	29,216	22,354	9,011	248,710
% of Total Population	75.6	11.8	9.0	3.6	
% Change by Race	4.4	11.9	53.0	61.6	9.8

(Numbers in thousands)

Source: U. S. Department of Commerce Bureau of the Census

representation in the schools grew from 6.4% to 9.9%; and Asian representation more than doubled from 1.2% in 1976 to 2.8% in 1986. Despite this dramatic growth, Asians continue to be a relatively small percent of the total. American Indian representation, which is also very low, remained constant at nine-tenths of 1% (NCES, 1990).

The demographic shifts in the population are likely to affect the nation's colleges and universities in different ways, depending in part upon their geographic location and other factors such as their admissions standards and cost. The location of a college or university is especially important because the various ethnic groups are concentrated in different regions and because their growth rates vary. African Americans, for example, make up the largest minority group in both the school-age and general populations of the South, but Latinos have that distinction in California and Texas. Asians make up the largest minority group in Hawaii and a growing share of the population and school enrollments in California.

A 1986 study by Gary Orfield revealed, however, that the public schools in the southern region of the United States were 26.6% African American in 1968 and 26.1% 16 years later. This modest gain in non-African American student population over 16 years is counter to the forecasts made during the 1960s and 1970s of greater African American presence in the South's public schools. These projections were based largely upon the expected impact of court-ordered desegregation which was expected to cause whites to abandon public schools in favor of private ones. Two factors contributed to the stability in the rate of African American representation in southern public schools. First, the "white flight" forecast did not occur to the extent projected, and white students continued to enroll in southern public schools at nearly the same rate as they did in 1968. Second, the rate of African American migration from the South to other regions of the United States was greater than projected. Table 2 illustrates that African Americans were more evenly distributed throughout the United States in 1984 than they were 16 years earlier.

Because the majority of Latinos (60.5%) reside in two states, California and Texas, and an additional 20.5% live in New York, Illinois, Florida and New Mexico, the college-going rates and ethnic composition of colleges and universities in those states should increase much more dramatically than in the Southeast where the African American population is not increasing as rapidly. In each of these states, however, the sub-population of Latinos has to be taken into account, primarily distinguishing between Puerto Ricans and Mexican Americans, because their immigration and population growth patterns and their socioeconomic status and educational needs all differ.

While demographic changes and conditions of the population are important, those factors alone will not be the basis upon which colleges and universities set goals and make progress in increasing student entry. They also are not useful for projecting minority student retention and performance in college. Existing gaps between minority representation in the elementary/secondary schools and their representation in higher education are unlikely to dissipate simply by virtue of the growing majority representation in the school-age populations. In fact, because a higher proportion of minority youth are born in areas of poverty (where the schools are also weakest) and because the greatest contribution to the U.S. minority population is the growing rate of relatively undereducated immigrants, gaps are more

likely to expand unless extraordinary and effective interventions are undertaken in the elementary and secondary schools that minority students attend.

Student Preparation and Resources

In addition to assessing the numbers and geographic distribution of ethnic groups in the population and their flow through the education pipeline, it is also important for colleges and universities to measure the quality of minority youths' schooling, their academic and social preparation for entering and succeeding in college and their ability to pay for college.

Selecting from the Applicant Pool. College and university admission is a critical juncture in the higher education assessment process. For most four-year institutions, this means deciding — based upon student interests and aspirations, high school grades, admissions test scores and their projected likelihood of succeeding — which applicants should be admitted. For colleges and universities with open-admissions policies, the process often involves administering placement tests to ascertain the developmental/remedial education needs of the students who enroll.

Long before reaching the age for entering a college or university, African Americans and Latinos attend relatively poor schools, are more frequently enrolled in the non-academic tracks of their high schools, have lower levels of academic achievement and often drop out altogether. To illustrate this point, Table 3 presents the recent reading, writing and mathematics proficiency scores of white, African American and Latino 9-, 13- and 17-year-olds on the National Assessment of Educational Progress (NAEP). In each case, the African American and Latino youth trailed their white counterparts, with the largest gaps appearing in the earliest assessment, age 9, with only modest narrowing by age 13, a gap that persists through age 17 in each subject area. The 1990 NAEP trial math assessment also revealed that students attending urban advantaged schools significantly outperformed their disadvantaged counterparts. In addition to their relatively low performance and achievement, black and Hispanic students took fewer mathematics courses, especially advanced courses, than their white counterparts and were less likely to be in the academic track. Furthermore, nearly 33% of Latinos and 14% of African Americans, compared to 12.4% of white high school students, drop out each year (NCES, 1991).

Table 4 presents the state-by-state NAEP math trial assessment results for 1990. Among off-the-cuff reasons offered by some state officials in the highest performing states were lower than-national-average divorce rates, long winters and better funding for schools. Review of the data in Tables 3 and 4 suggests there may also be a correlation between ethnic composition of the population and states' performance on the math assessment.

It appears that the states with the highest performance have populations with the least ethnic diversity. The data in Table 4 reveal that among the top 10 performing states the one with the highest percent of African Americans was Wisconsin with 5%, and the one with the highest percent of Latinos was Wyoming with 5.7%. States with higher-than-average

Table 2

Regional Changes in White, Black and Hispanic % Enrollment, 1968-86

	Whites			African American			Latinos		
	1968	1984	1986*	1968	1984	1986*	1968	1984	1986*
Northeast	84.6	76.1	75.9	11.3	14.1	13.6	3.7	7.6	8.2
Midwest	87.9	82.4	82.5	10.3	13.0	12.5	1.3	2.3	3.1
Border	81.9	76.9	78.1	17.1	18.8	17.5	.2	1.0	1.0
South	67.9	63.4	60.6	26.6	26.1	27.3	5.1	9.0	10.6
West	79.1	64.4	64.6	6.1	6.9	6.5	12.1	21.1	20.9
U.S. Total	80.0	71.3	70.4	14.5	16.2	16.1	4.6	9.1	9.9

The regions used for analysis in this working paper are defined as follows:

South:	Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia
Border:	Delaware, District of Columbia, Kentucky, Maryland, Missouri, Oklahoma, West Virginia
Northeast:	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
Midwest:	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
West:	Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Source: Orfield, G. (September 1986). "Racial change in U. S. school enrollments, 1968-1984, Working Paper No.1. Paper presented at the National Conference on School Desegregation Research. A product of the National School Desegregation Project.

*Source: U. S. Department of Education, Office for Civil Rights, 1986 National Summaries of Elementary and Secondary School Civil Rights Survey.

Table 3

Ethnic Group Comparisons in Recent Administrations of the National Assessment of Educational Progress

	African Americans	Whites	Latinos
	Scale Score		
1988 Reading Assessment Means[1]			
Age 9	188.5	217.7	193.7
Age 13	242.9	261.3	240.1
Age 17	274.4	294.7	270.8

1. Reading

Level: 150 = Rudimentary — can carry out simple discrete reading tasks
200 = Basic — can understand specific or sequentially related information
250 = Intermediate — can search for specific information, interrelate ideas, and make generalizations
300 = Adept — can find, understand, summarize, and explain relatively complicated information
350 = Advanced — can synthesize and learn from specialized reading materials

1988 Writing Assessment Means[2]			
Age 9	150.7	180.0	162.2
Age 13	190.1	213.1	197.2
Age 17	206.9	225.3	202.0

2. Writing Proficiency Chart

Level: 100 = Unsatisfactory — failed to reflect a basic understanding of the task
200 = Minimal — recognized the elements needed to complete the task, but were not managed well enough to ensure the intended purpose
300 = Adequate — included features critical to accomplishing the purpose of the task and were likely to have the intended effect
400 = Elaborated — beyond adequate, reflecting a higher level of coherence and elaboration

	African Americans	American Indians	Whites	Asians	Latinos
	Scale Score				
1990 Mathematics Assessment Means[3]					
Age 9	194.0	211.0	223.0	228.0	201.0
Age 13	241.0	248.0	272.0	285.0	248.0
Age 17	270.0	290.0	301.0	315.0	278.0

3. Mathematics Proficiency Scale

Level: 150 = Simple arithmetic facts
200 = Beginning skills and understanding
250 = Basic operations and one-step problem-solving
300 = Moderately complex procedures and reasoning
350 = Multistep problem-solving and algebra

1986 Science Assessment Means[4]			
Age 9	196.2	231.9	199.4
Age 13	221.6	259.2	226.1
Age 17	252.8	297.5	259.3

4. Science Proficiency Scale

Level: 150 = Knows everyday science facts
200 = Understands simple scientific principles
250 = Applies basic scientific information
300 = Analyzes scientific procedures and data
350 = Integrates specialized scientific information

Source: National Assessment of Educational Progress, The Nation's Report Cards for Reading (1988), Writing (1988), Mathematics (1990), Science (1986).

Table 4

1990 NAEP State Trial Assessment Proficiency Scores and 1990 State Population Statistics by Race/Ethnicity

	Average Proficiency	Total Population	% of Population White	% of Population American Indian	% of Population African American	% of Population Latinos*	% of Population Asian	% of Population Other
North Dakota	281	638,800	94.6	4.1	0.6	0.7	0.8	0.5
Montana	280	799,065	92.7	6.0	0.3	5.3	0.5	0.5
Iowa	278	2,776,755	96.6	0.3	1.7	1.2	0.9	0.5
Nebraska	276	1,578,385	93.8	0.8	3.6	2.3	0.8	1.0
Minnesota	276	4,375,099	94.4	1.1	2.2	1.2	1.8	0.5
Wisconsin	274	4,891,769	92.2	0.8	5.0	1.9	1.1	0.9
New Hampshire	273	1,109,252	98.0	0.2	0.6	1.0	0.8	0.3
Wyoming	272	453,588	94.2	2.1	0.8	5.7	0.6	2.3
Idaho	272	1,006,749	94.4	1.4	0.3	5.3	0.9	3.0
Oregon	271	2,842,321	92.8	1.4	1.6	4.0	2.4	1.8
Connecticut	270	3,287,116	87.0	0.2	8.3	6.5	1.5	2.9
New Jersey	269	7,730,188	79.3	0.2	13.4	9.6	3.5	3.6
Colorado	267	3,294,394	88.2	0.8	4.0	12.9	1.8	5.1
Indiana	267	5,544,159	90.6	0.2	7.8	1.8	0.7	0.7
Pennsylvania	266	11,881,643	88.5	0.1	9.2	2.0	1.2	1.0
Michigan	264	9,295,297	83.4	0.6	13.9	2.2	1.1	0.9
Virginia	264	6,187,358	77.4	0.2	18.8	2.6	2.6	0.9
Ohio	264	10,847,115	87.8	0.2	10.6	1.3	0.8	0.5
Oklahoma	263	3,145,585	82.1	8.0	7.4	2.7	1.1	1.3
New York	261	17,990,455	74.4	0.3	15.9	12.3	3.9	5.5
Delaware	261	666,168	80.3	0.3	16.9	2.4	1.4	1.1
Maryland	260	4,781,468	71.0	0.3	24.9	2.6	2.9	0.9
Illinois	260	11,430,602	78.3	0.2	14.8	7.9	2.5	4.2
Rhode Island	260	1,003,464	91.4	0.4	3.9	4.6	1.8	2.5
Arizona	259	3,665,228	80.8	5.6	3.0	18.8	1.5	9.1
Georgia	258	6,478,216	71.0	0.2	27.0	1.7	1.2	0.7
Texas	258	16,986,510	75.2	0.4	11.9	25.5	1.9	10.6
Kentucky	256	3,685,296	92.0	0.2	7.1	0.6	0.5	0.2
California	256	29,760,021	69.0	0.8	7.4	25.8	9.6	13.2
New Mexico	256	1,515,069	75.6	8.9	2.0	38.2	0.9	12.6
Arkansas	256	2,350,725	82.7	0.5	15.9	0.8	0.5	0.3
West Virginia	256	1,793,477	96.2	0.1	3.1	0.5	0.4	0.1
Florida	255	12,937,926	83.1	0.3	13.6	12.2	1.2	1.8
Alabama	252	4,040,587	73.6	0.4	25.3	0.6	0.5	0.1
Hawaii	251	1,108,229	33.4	0.5	2.5	7.3	61.8	1.9
North Carolina	250	6,628,637	75.6	1.2	22.0	1.2	0.8	0.5
Louisiana	246	4,219,973	67.3	0.4	30.8	2.2	1.0	0.5
Guam**	231							
District of Columbia	231	606,900	29.6	0.2	65.8	5.4	1.8	2.5
Virgin Islands**	218							
Total United States	261	248,709,873	80.3	0.8	12.1	9.0	2.9	3.9

*Persons of Latino origins can be of any race
**Population statistics are not yet available from the Bureau of the Census

Source: U. S. Department of Commerce Bureau of the Census
The State of Mathematics Achievement. NAEP's 1990 Assessment of the Nation and the Trial Assessment of the States. (June 1991). National Center for Education Statistics

performance that also had a relatively high level of ethnic diversity were Virginia, New York and Delaware; all three fell into the second decile among the states and territories included in the rankings. Research is needed to identify why these states performed above the national average even with the relatively high density of minorities in their populations.

In 1988, approximately 61% of white students, 45% of African Americans and 57% of Latino high school graduates enrolled in postsecondary education within a year of receiving their high school diplomas (NCES, 1991). These included both part-time and full-time students who attended four-year and two-year institutions, as well as other postsecondary technical schools. Among those who entered college upon completing high school, Latino students attend full-time (85%) at a slightly lower rate than African Americans (90%) and whites (89%). In 1988, 44% of Latinos, compared with 58% of African Americans and 64% of white college students were enrolled in four-year institutions. Sixty percent of Asian college students were enrolled in four-year colleges and universities (NCES, 1990).

Enrollment in historically black colleges and universities (HBCU) increased by nearly 10% between 1987 and 1989. While African Americans made up 84% of the student population in HBCUs, their enrollment rate increased by only 9.9% compared to 16.1% for whites, 32.1% for Asians and 18.9% for Hispanics. One in every six African Americans enrolled in higher education attended an HBCU (Carter and Wilson, 1991).

College admission is a critical point in the assessment process because college and university decisions about which students to accept and student decisions about whether and where to attend college have an enormous impact upon subsequent experiences and outcomes. Students' level of effort and involvement and such outcomes as grades earned, the quality of social and academic experiences, the rate of progress toward completing the curriculum and educational and career success beyond college all hinge upon whether the institution is a "good fit" for the student or whether the institution is prepared to accommodate a range of student needs. The overwhelming evidence is that many college students from underrepresented minority groups are underprepared, have relatively low-quality performance and experiences, drop out at higher rates and progress slower, if they persist at all.

College Admissions Test Scores. Even with the steady progress during the past decade, the average college admissions test scores of non-Asian minority college-bound seniors remained substantially below those of their white counterparts. For example, African American college-bound seniors in 1990 scored an average of 90 points below whites on the verbal section of the SAT (352 compared to 442) and 105 points below on the quantitative section (385 compared to 491). Among Latinos in 1990, the average Mexican American college-bound senior scored an average of 62 points below whites on both parts of the SAT, while Puerto Ricans scored 83 points below whites on the verbal and 86 points below on the quantitative (College Board, 1990). Even on the Test of Standard Written English, an exam given by the College Board to measure students' ability to use the level and type of language typically found in college textbooks and classrooms, minorities scored below the total mean of 42.5. Table 5 shows that in 1990, for example, African Americans and Puerto Ricans attained the lowest score of around 35.5 while their white counterparts averaged 44.6.

Similar score differences occur in the Advanced Placement (AP) exams given by the College Board. These prestigious examinations could become even more important as "America 2000," President Bush's strategy to accomplish the national education goals, is implemented. America 2000 proposes to use AP tests to award Presidential Citations for Educational Excellence until new American achievement tests can be developed. Although minorities represented 24% of students taking AP examinations, African Americans represented only 4%, Hispanics represented 6%, Asians 14% and whites 75%. Table 6 shows that African Americans received the lowest total score of 2.30 (out of possible five points) compared to 3.00 for Mexican Americans, 3.03 for Puerto Ricans, 3.05 for whites and 3.17 for Asians. In addition, African Americans were the lowest scoring group on biology, chemistry, English language, English literature and mathematics exams. It is also very important to observe in Table 6 the severe underrepresentation of African Americans, American Indians and Latinos among the AP test takers.

Although the ACT composite scores of whites declined over a five-year period from 21.5 in 1986 to 21.2 in 1990, they remained substantially above the scores of non-Asian minority groups. African Americans, Mexican Americans and Puerto Ricans obtained composite scores of 17.0, 18.3 and 19.3, respectively.

The overall higher average performances of Latinos over African Americans on college admissions tests do not suggest that Latinos are better prepared for college. Rather, it more likely reflects the fact that more Latinos drop out of high school and thus fewer take college admissions tests. Further refinement in the definition of the ethnic categories reveals that a smaller proportion of college-age Mexican Americans, for example, are college-bound than Puerto Ricans. Similarly, a smaller proportion of college-age Puerto Rican students are college-bound than African Americans.

Table 7 illustrates one factor contributing to the differences in admissions test performance among minorities and whites — high school curricula. A higher percentage of white students take academic curricula than non-Asian minorities, and their average test score differences reflect that; students who take academic curricula tend to have higher scores. According to ACT, only 42% of African Americans and 43% of Mexican Americans, compared with 48% of white college-bound seniors, take academic curricula in high school. Asians taking the ACT represented the only group in which more than 50% of the students were taking core or more advanced courses. Data are not available on tracking in which students are prohibited from electing courses or are placed into high school courses based upon their perceived or measured ability. These data, however, need to be collected in order to understand the underpreparation of minority students and their opportunity to prepare for college.

In addition, new methods for projecting student success in higher education have been proposed and should be tried by colleges and universities. Winton Manning at the Educational Testing Service in Princeton, New Jersey, has proposed a new admissions model that he calls Measure of Academic Talent (MAT). MAT combines a score from a standardized admissions test (i.e., SAT, ACT) with socioeconomic status to predict a student's ability to succeed in college. This method permits colleges and universities to identify overachievers at all socioeconomic levels, and it is that factor that Manning believes

Table 5

Test of Standard Written English

		N
White	44.6	694,976
African American	35.5	94,311
American Indian	39.3	10,466
Asian	39.9	71,792
Latin American	38.8	23,608
Mexican American	38.9	26,073
Puerto Rican	35.6	11,400
Other	40.8	14,632
Total*	42.5	1,025,523

Source: The College Board. (1990). [National Sex/Ethnic Data]. Unpublished data.

* The sum of the total ethnic numbers does not add up because of no responses.

Table 6

1990 Advanced Placement Scores by Race

	Biology		Chemistry		English Language		English Literature		U. S. History		Mathematics/ Calculus AB		Mathematics/ Calculus BC		TOTAL	
White	69%	2.97	66%	2.93	74%	2.95	76%	3.18	74%	2.83	71%	3.24	60%	3.65	71%	3.05
African American	4%	2.07	3%	1.96	4%	2.14	5%	2.40	4%	2.20	3%	2.31	2%	3.08	4%	2.30
American Indian	.3%	2.50	.3%	2.20	.5%	2.57	.3%	2.81	.3%	2.56	.3%	2.51	.2%	3.52	.3%	2.62
Asian	16%	3.17	20%	3.20	10%	2.99	9%	3.19	11%	2.92	16%	3.43	28%	3.72	13%	3.17
Mexican American	1%	2.20	1%	2.10	3%	2.40	2%	2.64	2%	2.36	2%	2.72	1%	3.18	2%	3.00
Puerto Rican	.4%	2.41	.3%	2.49	.3%	2.55	.3%	2.64	.4%	2.37	.3%	2.79	.2%	3.20	.5%	3.03
Other Latino	2%	2.47	2%	2.34	2%	2.72	2%	2.91	2%	2.54	2%	2.88	1%	3.43	3%	3.22
Other	2%	3.07	2%	2.82	2%	3.06	1%	3.23	1%	2.90	1%	3.23	1%	3.52	1%	3.12
Not Stated	6%	3.17	6%	3.14	5%	3.12	5%	3.29	5%	3.02	5%	3.37	7%	3.72	6%	3.23
Total	100% N=32643	2.96	100% N=19289	2.94	100% N=25405	2.91	100% N=97733	3.13	100% N=92449	2.81	100% N=62676	3.23	100% N=13096	3.65	100% N=480696	3.05

Source: Advanced Placement Program, National Summary Report, 1990

Table 7

1990 Average ACT Composite Scores by Race and High School Program

	Average ACT Composite Score	% with Core or More Preparation	Average ACT Composite Score with Core or More Preparation
White	21.2	48%	22.8
African American	17.0	42%	18.2
American Indian	18.0	35%	19.9
Asian	21.7	61%	22.8
Mexican American	18.3	43%	19.9
Puerto Rican	19.3	49%	20.9
Other	19.5	42%	21.5
Total	20.6	45%	22.3

*Core defined as four years of English, three or more years of Mathematics, three or more years of Social Sciences and three or more years of Physical Science

Source: The American College Testing Program

is useful in predicting students' likelihood of succeeding in college. MAT's predictive validity has yet to be tested in the college and university admissions process. Only then can its value and contribution to minority and disadvantaged students' access to higher education be determined.

Evidence abounds of colleges and universities adjusting their admissions policies in order to admit more minority students. Some recently enacted state assessment and curriculum placement policies have produced a sorting mechanism that is higher education's version of tracking. Policies enacted in Texas, New Jersey and Georgia require students entering public colleges and universities with admissions or placement test scores below a specific level to take remedial/developmental non-credit courses. As a result of these and similar policies, nearly 25% of all freshmen and 42% of non-Asian minorities are placed into developmental curricula upon entering college. These rates are nearly doubled at two-year colleges. Estimates are that from 80% (U.S. Office of Educational Research and Improvement, 1986) to 98% (College Board, 1990) of U.S. colleges and universities offer developmental/remedial instruction; the majority of students enrolled in such courses are from underrepresented minority groups.

Because states and colleges and universities are investing large amounts of money into developmental/remedial programs, they should evaluate the programs for accountability and to ensure that students are improving their intellectual skills, completing the developmental/remedial curricula and ultimately succeeding in the mainstream college curriculum. In many respects, resources invested into college remedial programs are aimed at providing the educational preparation that college students should have received in elementary and secondary schools. The need for developmental/remedial programs is likely to continue until the gulf between minority and majority students' precollegiate preparation is eliminated and until elementary and secondary schools are substantially overhauled to help minority students succeed.

Typical assessment in these developmental/remedial programs involves a pretest when students enter college and a post-test to measure their basic intellectual skills after a year or two. Results are used to inform the faculty about whether students are adequately prepared to proceed into the regular college curriculum. Colleges typically use a pre-determined cut-off score on a post-test to decide whether students enter the developmental/remedial curriculum and when they are qualified to exit from it. Institutions usually do not take into account, but should, retention and rates of progress of students who enter through the remedial track compared with those entering the normal mainstream college curricula. Also important are the transfer and baccalaureate degree completion rates of those who initially enter two-year colleges, compared to their counterparts who start college at four-year institutions.

In his recent book, *Illiberal Education*, Dinesh D'Souza documents the lower rates of graduation among minority students who enter the University of California at Berkeley with lower SAT scores. D'Souza attributes this lower success rate to the students' lack of preparation to cope with the rigor and academic competition of Berkeley. Based upon these results, D'Souza finds fault with UC Berkeley's affirmative action policies. The policies, he says, permit underprepared, underrepresented minority students to enter and fail but deny access to qualified Asian and white applicants whose SAT scores and other credentials would

make them likely to succeed at Berkeley or practically any of America's elite universities. Such analyses are important for policy development and for assessing the effects of policy. But analyses of this type must go much further to answer the more important question of how the institution can graduate more of the underrepresented minority students it admits. Many of the reasons for a student's success or failure depend upon how well the university addresses students developmental needs. Better and more detailed assessments of these programs should help universities develop appropriate interventions.

In addition, with the growth of continuing education and adult students entering or re-entering college, college and university officials are finding it increasingly important to assess the educational needs, aspirations and achievement of minority adult populations, as well as traditional college-age minority students. In 1987, 86% of whites, 83% of African Americans and only 60% of Latinos between the ages of 25 and 29 had completed high school. At the same time, for the same age group, 27% of whites, 14% of African Americans and 15% of Latinos had completed four years of college or more (NCES, 1990).

Economic Needs. The economic conditions of minorities are also an important demographic factor for colleges and universities as well as public policy makers to consider in planning and goal setting. Nearly 50% of African Americans and approximately 40% of Latinos below the age of 18 live in poverty, compared to 15% of their white peers (NCES, 1990). Aside from the fact that socioeconomic status and academic achievement and quality of schooling are all interrelated (Arbeiter, 1986), the socioeconomic status of minority youngsters is widely believed to make attending college financially prohibitive and to discourage them from investing the effort to prepare academically for college. The percent of poor high school graduates enrolling in college decreased from 34% in 1975 to 30% in 1986. At the same time, however, non-poor student enrollment increased from 34% to 39% (Children's Defense Fund, 1990).

The greater financial need of minority students is illustrated in Table 8 which shows that minority college students make up a much higher proportion of need-based federal aid recipients than they represent of the general college student population. Table 8 shows that minorities represent 21% of the college student enrollments in U. S. colleges and universities, but receive 37% of Pell Grants (National Survey of Student Financial Aid).

Judging the effectiveness of financial interventions to enhance the size and quality of the minority student pool is important. Financial incentives offered to students at an early age, for example, are believed to help motivate and encourage minority students to improve their precollege academic preparation. Such incentives also are being advanced as a means of enhancing opportunities for minorities to attend college when it appears that higher education is too expensive. But whether and to what extent these programs work in achieving these objectives need to be measured after they have been implemented for a sufficient time.

Table 8

1988 Percent of Enrollment and Financial Aid Recipients by Race

	Enrollment	Pell Grant	SEOG	NDSL	GSL
White	79%	63%	65%	77%	80%
Total Minority	21%	37%	35%	23%	20%
African American	9%	20%	18%	11%	11%
Latino	6%	9%	9%	6%	5%
Asian	5%	6%	7%	6%	3%
American Indian	1%	2%	1%	1%	1%

Source: Office of Educational Research and Improvement, U. S. Department of Education. (1987). National Postsecondary Student Aid Study. Unpublished data.

Federal financial aid programs, although important, are not sufficient to meet the economic needs that disadvantaged Americans have to attend college. Consequently, new state policies and programs are emerging to motivate students to prepare for college and to provide prospective students with the resources they need to attend. The new Louisiana College Tuition Plan, New York State's Liberty Scholarships and Rhode Island's Children's Crusade for Higher Education are examples of such statewide intervention programs designed to increase the college-going rates of economically disadvantaged students in these states. The Chattanooga (Tennessee) Community Fund, which will raise a $40-million endowment fund to provide tuition for high school graduates from families with incomes below $35,000, is the first community-based project of this kind in the nation.

These new laws, policies and programs require states to pay all college tuition and fees for students who fall below a specified family income level, but who are prepared academically to enroll in the state's public universities. Using financial incentives for attending college, these programs aim to motivate young children in elementary and high schools to stay in school, achieve high rates of attendance and performance and, in the case of Rhode Island, to remain free of drug use and crime. After these programs have operated for a few years, they should be evaluated to assess cost to the states and effectiveness in increasing minority student enrollment, retention and overall performance in elementary, secondary and higher education. Proper assessment also will help state legislatures to know how they should modify these policies to achieve greater success. If the programs succeed in accomplishing these objectives, other states and perhaps even the federal government should adopt similar policies.

In addition to state policy and program initiatives designed to enhance the size and quality of the minority student pool, federal government policies and programs need to be prominent targets for evaluation. Three federally funded TRIO programs, for example — Educational Opportunity Centers, Talent Search and Upward Bound — have a 25-year history of providing informational services and academic support to disadvantaged high school youth. However, there has been little evidence to show their effectiveness or to demonstrate their impact in expanding the college eligibility pool of minority and disadvantaged citizens. This is not to suggest that the TRIO programs have not contributed; it is just that without regular assessments of the effects on students, it is impossible to judge current impact and potential future impact.

STUDENT EXPERIENCES AND INSTITUTIONAL PRACTICES

Student attitudes, behaviors and experiences and institutional programs, practices and policies constitute what often has been called institutional climate. Like student background characteristics, institutional climate contributes to both student and institutional outcomes. It accounts for much of the persistence, progress and academic achievement of college students.

The published goal statements of many higher education institutions include their aspiration to improve the quality of all students' college experiences. Institutions that adopt such goals are compelled to compensate for student deficits that may result from disadvantaged backgrounds with the same vigor they address academic deficiency of entering students. Periodic assessments of student experiences help institutions measure progress toward achieving campus environments where satisfaction and normal social and academic functioning are not racially distinguishable. Assessing these non-cognitive dimensions of college is best conducted by measuring the attitudes, opinions and behaviors of students. This also helps to identify social factors beyond student background and academic preparation (institutional factors) that impede or promote student progress and achievement.

Some student indicators that are important in assessing the quality of life on campus include students' habits; participation in honors and other programs that provide privileges, prestige and status; satisfaction with faculty, administrators and the academic and student support services of the institution; their peer relationships; academic integration or relationships with faculty inside and outside of classrooms; social integration or involvement in campus social life; feelings about the existence of racial discrimination on campus; and feelings of equity and inclusion in all aspects of campus life.

The important generic institutional factors of campus environment include ethnic composition of the student body, faculty and administration; policies regarding ethnic diversity; and campus-sponsored programs and policies to achieve social, academic and cultural programs that advocate acceptance of diversity among students, faculty and administrators (Smith, 1988 and 1990).

Surveys or questionnaires are most often used to ascertain student opinions, attitudes and behaviors. Other "unobtrusive" approaches, while typically unscientific, also can be valuable. These approaches might include observations of student behaviors in popular campus meeting places such as residence halls, cafeterias, student unions, sporting and intramural events as well as participation in clubs, organizations and volunteer activities. Such observations provide valuable insight into the quality of students' campus life and how it works for different ethnic groups. Other indicators include topics and tone of published articles in student newspapers and other campus publications and negative campus incidents or interactions involving people of different ethnic backgrounds. Such indicators help to shape perceptions of the public, many of whom are involved in developing college or university policies.

Such casual observations should not be generalized, however, without supporting evidence collected through more scientific methods. Assessments also should include adequate representation of each minority group, as well as of majority students. Surveys or observations of students belonging only to one ethnic group tend to disguise differences among groups (e.g., Mexican Americans, Puerto Ricans, African Americans). Studies that exclude majority students do not show how minority students' experiences compare. Comparisons are needed to monitor progress toward achieving equality among minority and majority groups.

Because student experiences, like student backgrounds vary, over time, and hopefully improve because of institutional actions and interventions, it is important to repeat studies of campus environments periodically in order to monitor trends. Pre- and post-assessments also may be useful for showing change in the quality of each class' experience over time, e.g., from freshman to senior year, as well as for comparing various classes, e.g., the class of 1985 and the class of 1992.

A literature review of the last 20 years of undergraduate student experiences and performance found only a small amount of research addressed the problems and issues of any minority group's experiences in the nation's colleges and universities. However, the amount of research on African Americans and Latinos exceeded that devoted to Asians and American Indians. The review also found that, as with personal and academic background characteristics and preparation, minority students of various ethnic groups differed from one another with respect to their experiences and performance in college. But the experiences of non-Asian minorities tended to be inferior to those of their majority students attending the same institutions. Findings of the research literature indicated that "the climate for minorities on campus is more alienating than involving. On more and more campuses, racism and racial hostility are no longer thinly disguised. Sadly, on many campuses racism is a fact of life" (Smith, 1990).

Student and faculty behaviors and perceptions can be powerful in fostering diversity and narrowing the gap between minority and majority student performance. Regardless of ethnicity, students who experience favorable and frequent interaction with faculty have strong commitment to their institution and high motivation to achieve academic success have more satisfying and healthy college experiences (Mow and Nettles, 1990). These factors, however, have been found to be more important in predicting outcomes, e.g., graduation and grades, of minority students than of majority students (Tracey and Sedlacek, 1987). Positive self-concept also has been found to be related to student performance and outcomes (Astin, 1982; Pascarella, Smart, Ethington, and Nettles, 1987), but prior research and assessments have not been designed to discern whether the positive self-concept — the chicken — precedes the positive outcomes — the egg — or vice-versa.

Additional behavioral differences between majority and minority students should be measured when assessing the educational experience and process. Such factors as differing rates of stopping-out and returning to college, transfer rates from both four-year and two-year institutions to other four-year institutions, and patterns of selection and distribution of

minority students among the various major fields have consistently been found to be related to the relative quality of experiences students have in college, to the quality of their college environment and to institutional and student outcomes.

STUDENT AND INSTITUTIONAL OUTCOMES

In recent years, measuring outcomes has been the central focus of higher education assessment. Early in the past decade, colleges and universities and the agencies that accredit them were criticized for carrying on the tradition of placing enormous emphasis upon inputs and processes when judging the quality of institutions while neglecting outcomes assessment. The impact of this criticism upon institutional practice has been enormous. Recent estimates indicate that 40 states require colleges and universities to assess outcomes and that more than half the colleges and universities in America are engaged in various stages of planning or conducting outcome assessments (Ewell, Finney and Lenth, 1990; El-Khawas, 1986).

Numerous approaches to outcome assessment have emerged in the past decade. These range from written and oral performance exhibitions (Mentkowski and Loacker, 1985) to more traditional standardized test and survey instruments that purport to measure student development in general education, major field achievement and non-cognitive development (McClain and Krueger, 1985; Banta, 1985; McTarnaghan, 1990). The typical indicators of student outcomes include course grades, cumulative grade-point average, student progression rates, student performance on measures of general education and major field tests and alumni achievement in post-baccalaureate education and career pursuits.

Institutional indicators include the numbers of minority students represented in the graduating class, the performance of minority students relative to their majority counterparts on assessments of general education and major field achievement, and the equality of their preparation for education and career opportunities after graduating from college.

The performance of minority students tends to lag behind that of majority counterparts even when they have studied the same college curriculum. Research reveals that, on average, non-Asian minority students have lower college gradepoint averages, progress slower through the curriculum, score lower on tests, are less likely to attend graduate school, score lower on graduate admissions tests, are offered fewer research assistantships for graduate school and have fewer opportunities in the labor market upon completing college.

Similarly, colleges and universities report smaller numbers of minorities in their graduating classes than in their entering classes of freshmen and appear to be unsuccessful in eliminating performance gaps between minority and majority students. Nationally, African Americans and Latinos represented 5.7% and 2.9%, respectively, of the baccalaureate degree recipients in 1989. But African Americans averaged over 8% of the total four-year college enrollment for the six prior years, while Latinos represented only 3.5% of enrollment over the same time (NCES, 1991). Both the number and the percent of African American bachelors,' masters' and doctoral degree recipients declined nationally during the past decade, while all others, except white masters' and doctoral-degree recipients, increased. Between 1979 and 1989, the number of African Americans receiving baccalaureate degrees declined 3.5%. For masters' degrees, the decline was 30%, and for doctoral degrees 16% (NCES, 1991). While data for Latinos show some progress, there has been a substantial lag between their share of advanced degrees and their increasing share of the U.S. population.

CONCLUSION

The fact that assessment has moved to the forefront of higher education suggests that the process of setting goals and identifying areas in need of intervention can become much more refined. As colleges and universities gain greater appreciation of the need and value of assessment, they must be prepared and willing to take action to improve practices and outcomes.

In some cases, especially in the short term, assessment could reduce opportunities and access and lead to lower performance and outcomes for minority groups than might be expected, particularly blacks and Hispanics. This is evident in the admissions processes of undergraduate and graduate schools and academic programs such as teacher education where standardized test scores may be used to screen and select students (Simon, 1990). It is also evident in states with new assessment and testing policies, such as Florida. A higher proportion of minority than majority test-takers fail to meet the cut-scores required to move to junior class status in the curriculum (McTarnaghan, 1990).

At the same time, however, that these policies and practices restrict and/or alter opportunities, they reveal valuable information about the academic development needs of minority students that would otherwise go undetected and probably untreated. The fact that minority students, on average, receive lower scores on standardized admissions tests than majority students reflects in part the relatively low quality of schooling provided for minority children. Recognizing this relationship helps parents and policy makers understand that by improving the schools that minority children attend they are also likely to improve such outcomes as test performance, entry and success in colleges and, in turn, the overall quality of colleges and universities and their academic programs and courses.

The tension between greater access and college and university quality persists, but has never been more important to higher education than today. Assessments help to quantify and characterize performance deficits. For example, one objective of national education goal #4 — being first in the world in math and science by the year 2000 — is to increase the number of minority students who enter and successfully complete math and science education curricula. This will require each U.S. college and university to identify the extent of underrepresentation in these fields and the obstacles to greater minority participation so they can develop strategies for more favorable outcomes. Assessments of student qualifications, aspirations, attitudes and behaviors; institutional and departmental admissions policies, racial composition of the faculty and administration; and institutional affirmative action initiatives should be examined in planning to increase minority representation and achievement.

The focus of contemporary assessments on college and university campuses is much broader than measuring student admissions qualifications. Measures of the characteristics, strengths and weaknesses of the general population and sub-groups of students, the attitudes and behaviors of students and faculty, observations of everyday student and faculty behaviors and

measures of alumni attitudes and achievement are all important aspects of college and university assessment strategies. How colleges and universities use the results and findings to establish policies and programs to improve minority outcomes is an important factor to monitor, and assessment provides a vehicle for doing so.

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