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ABSTRACT

During the 1980s the 15 Southern Regional Education Board (SREB) states led the nation in implementing new standards and programs to improve the quality of education. The most common goals set by SREB states include: (1) ensuring that all children are ready for either first grade or kindergarten; (2) improving accountability programs in which school performance is evaluated regularly; (3) improving student achievement; (4) reducing the dropout rate or increasing the high school graduation rate; (5) increasing the number of students ready for college-level work; and (6) attracting, retaining, and compensating good teachers and faculty. In October 1988, SREB's Commission for Educational Quality put forward 12 specific goals of education and a number of "indicators of progress" for reaching these goals. This report presents SREB's 12 goals and focuses on national benchmarks to which SREB states can compare themselves, addresses the adequacy of reporting systems for measuring progress, and highlights the status of states and the region on key educational indicators. Interspersed with the text are 8 figures and 16 tables. (MLF)

Educational Benchmarks

1990

Joseph D. Creech

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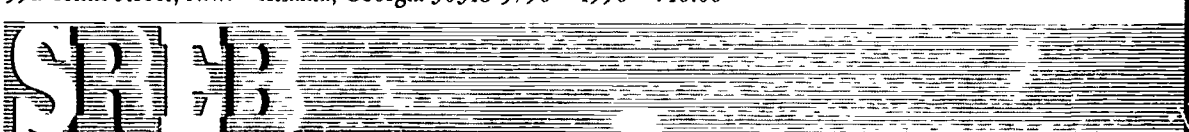


Southern Regional Education Board

Why are educational benchmarks necessary?

Goals represent where we want to be; educational benchmarks tell us where we are and if we are moving toward our goals.

Set specific goals for education. Signal your resolve to take actions for a better prepared work force, a more competitive position in an expanding global economy, and a better quality of life. This was the challenge in SREB's *Goals for Education: Challenge 2000* that presented a vision of what can be accomplished by the year 2000.

Educational goals challenge leaders in government and business, educators, and the public. They challenge us to make commitments of human and financial resources to achieve these worthy goals and insure a more literate and better informed citizenry. To sustain public support for reaching important goals, progress toward achieving them must be measured, and states must report forthrightly to the public on these educational benchmarks.

- Where do SREB states stand in relation to national levels of educational attainment and achievement?
- What information will be convincing and compelling as indicators of educational progress?
- Does your state have this information? If not, are you planning to obtain it?

These are some of the questions that SREB's *Educational Benchmarks, 1990* attempts to answer. The report focuses on national benchmarks to which SREB states can compare themselves, the adequacy of reporting systems for measuring progress, and highlights the status of states and the region on key educational indicators. As one might suspect, there is better information on some educational indicators than on others. An important part of setting goals and measuring progress toward achieving them is identifying what information is needed and how to provide it.

We cannot wait until the year 2000 to know if we are going to meet our educational goals. Our present information will not tell us well enough or soon enough how we are doing. Establishing goals for education demands that we have the information to provide educational benchmarks that tell us where we are and how fast we are moving.

Mark D. Musick, President

INTRODUCTION

During the 1980s SREB states led the nation in implementing new standards and programs to improve the quality of education. But, few states anywhere in America set specific goals for results they expected from new educational programs.

In October 1988, SREB's Commission for Educational Quality put forward 12 specific goals for education and a number of "indicators of progress" for reaching these goals

Several events are significant:

- Legislatures in eight SREB states (Georgia, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas) passed laws either setting goals or calling for the establishment of educational goals;
- In four other SREB states (Arkansas, Florida, Louisiana, and Virginia) the legislatures passed resolutions relating to educational goals;
- President Bush met with the nation's governors at an "education summit" that focused national attention on goal-setting for education;
- The nation's governors, through their National Governors' Association, and President Bush endorsed six national education goals for school readiness, school completion, student achievement and citizenship, achievement in mathematics and science, adult literacy and lifelong learning, and safe, disciplined, drug-free schools.

Goals proposed by SREB in 1988 and goals adopted in many SREB states can contribute toward the achievement of national objectives.

The most common goals set by SREB states include:

- assuring that all children are ready for either first grade or kindergarten;
- improving accountability programs in which school performance is evaluated regularly,
- improving student achievement;
- reducing the dropout rate or increasing the high school graduation rate;
- increasing the number of students ready for college-level work;
- attracting, retaining, and compensating good teachers and faculty.*

The jobs projected to be available in the year 2000 will require more persons with more education and more highly developed skills. In 1990, states already are encountering the real problem of a job market that requires more education and a work force with too many persons who have not fared well in our educational systems.

If present trends continue—

- Minority students will continue to have lower levels of academic achievement and higher dropout rates than their white counterparts but will comprise increasingly larger portions of the population and the workforce.
- Only 7 of 10 ninth-graders will complete high school by 1994, about one-third of the ninth-graders will pursue higher education, about 1 in 5 of them will earn a bachelor's degree and less than 1 in 10 will enter graduate or professional school.

* Specific information about the goals adopted by SREB states can be found in SREB's *Educational Goals in SREB States*

Educating a work force takes time as well as dollars. If programs had been implemented to help all children be ready for first grade in 1990, the full effects would not be reflected in high school graduation rates until after the turn of the century.

From the students enrolled in the ninth grade in the fall of 1990—

- the first trained teachers will complete their first year in the classroom in 1999;
- the first sizeable group of students to earn Ph.D.s in science or mathematics are not likely do so before 2004;
- the first physicians will begin practice in 2006;
- the first lawyers will take the bar examination in 2001;
- the first students to become principals, superintendents, and school board members are not likely to assume these positions before the year 2008.

What do these facts about our entering high school students tell us? They show us that—

(1) We should take action *now* and support promising initiatives of the 1980s if we wish to raise the educational achievement and attainment levels of the population by the turn of the century.

(2) We must measure progress toward goals over time because the results of educational improvements will not be apparent immediately.

(3) Improvements in a state's elementary and secondary schools cannot be separated from improvements in the quality of its colleges and universities.

Pursuing educational goals without indicators of progress is like traveling a highway without mileposts. We do not know where we are or how far we have to go. Those who pay the freight will become impatient if the trip takes longer than expected and if there is no reporting of how much progress is being made. Measuring progress toward goals requires establishing starting points and assessing how far and how fast we have come.

Each state needs information to measure progress over time. It is important for a state to measure progress against its own past achievements—but is that enough? In an age of increased economic competition among nations, can we afford not to know how student achievement in each state compares to national and international levels? Can we afford not to know if our state's citizens are acquiring the competencies necessary to be competitive nationally and internationally?

What we know—and do not know—about measures of educational progress

SREB states have participated in a comprehensive assessment of what is known about many measures of educational progress. SREB's *Goals for Education. Challenge 2000* proposed more than 60 indicators of progress. The SREB state assessment shows that for many of the indicators, information is not collected or analyzed by states.

The lack of common definitions for "dropout," "high school graduate," "at-risk student," and "school readiness" is a major obstacle for obtaining reliable comparative information. For example, "high school graduates" in one state might include students who receive a diploma, a General Educational Development (GED) certificate, a certificate of attendance, or those who completed some other "approved" program. In another state, "high school graduates" may include only those who completed the requirements for a diploma. A "dropout" also is defined differently from one state to another, and even among districts in the same state. Many states do not have the capability to monitor student transfers from system to system within the state, much less know about students who transfer to systems outside of the state. The wide variety of tests used by states to measure student achievement makes state-by-state comparisons impossible.

Few states analyze enrollment and achievement data at different grades by race/ethnicity and family income levels. Yet, reducing the disparities in educational attainment between minorities and their white counterparts and between students from families with different income levels are keys to overall educational improvement in SREB states. States are not likely to meet this goal, or any goal, if they do not have the facts.

Few states know how many students in grades 10 and 11 are pursuing college preparatory, general, or vocational curricula. This is a key piece of information in knowing how many students are being prepared for postsecondary education.

What is being done to improve the educational information base?

- The Dropout Statistics Field Test conducted by the National Center for Education Statistics is attempting to use a set of definitions agreed to by states to collect comparable information on dropouts. Twenty-seven states are participating, including nine SREB states.
- Thirty-seven states volunteered to participate in the National Assessment of Educational Progress (NAEP) Trial State Assessment of 8th-grade mathematics in 1990. Thirteen SREB states volunteered to participate in this nationwide program, which is similar to SREB's regional pilot project begun five years ago.
- The Science and Math Indicators Project is being conducted by the Council of Chief State School Officers.
- The National Center for Education Statistics, with the cooperation of the states, is providing more comparable and timely data on school membership, staffing, funding, college enrollments, and degrees awarded.
- The Council of Chief State School Officers Education Data Improvement Project has focused attention on data needed on the public schools, definitions for comparable data, and how the data should be reported. Its Task Force on High School Completion Rates has made recommendations that should result in more comparable high school completion rates.
- The National Educational Statistics Agenda Committee of the National Forum on Educational Statistics has made a series of recommendations for improving data on educational resources, staffing, student progression, postsecondary activities of students, and student achievement.
- Colleges and universities have begun to develop programs to assess outcomes of collegiate education. Improved monitoring of student retention and graduation rates is taking place at the institutional and state levels.

These are promising steps—but do not look for immediate help from these efforts. For example, the national Dropout Field Test results are not likely to be available until 1991. If the field test is successful, a nationwide program could be two or more years away from yielding results. The earliest state-by-state national assessment results will be available in 1991, but this is only for 8th-grade mathematics in the 37 participating states. Unless the United States Congress changes the law on the trial state assessments, information on more than two subjects at two grades cannot be available before 1995 or 1996.

Indicators of progress are not, in themselves, able to tell what is wrong or right, or why—they merely reveal where we are and how far we have come. The challenge is to refine and improve indicators so that we can be more precise about our progress and what is contributing to it.

Benchmarks, 1990 presents SREB's 12 goals and suggested indicators and comments about educational benchmarks pertaining to these goals.

BY THE YEAR 2000—

All children will be ready for the first grade.

What programs are SREB states offering to pre-kindergarten children? How is the term "at risk" defined by states and districts? How is readiness for school being assessed? What are the results of making preschool programs available for children who most need them?

SREB's *Reaching the Goal of Readiness for School* identified three major areas for measuring progress: availability of pre-school programs, quality of programs; and results for children.

Increase the percentage of "at risk" children served by pre-kindergarten and kindergarten programs to 100 percent.

Establish programs that help those children who are unprepared to begin work in the first grade in 100 percent of the districts.

All SREB states now fund publicly-supported kindergarten programs. The percentage of children in the first grade who have attended publicly-funded kindergarten is estimated to range from 70 percent to 95 percent among SREB states. Arkansas, Florida, Kentucky, Louisiana, Mississippi, Oklahoma, and South Carolina require students to attend either public or private kindergarten before entering the first grade.

New legislation in Mississippi and Kentucky provides for "ungraded" primary schools (grades 1-3). Students will progress at their own speed until they master particular skills. In Kentucky's new primary school program, students will be assessed twice each year to determine their progress.

Definitions of "at risk" children vary, but most states use socioeconomic status, parental educational level, a child's health characteristics, or some combination of these factors to determine who is "at risk." The percentages of 3- to 5-year-old children who are "at risk" range from 10 percent to 40 percent, according to estimates by SREB states.

Nine SREB states have funded education programs for pre-kindergarten children (see Table 1). Most programs focus on "at risk" 4-year-olds. Recent legislation in Kentucky and Oklahoma requires each school district to offer a half-day program for "at risk" 4-year-olds. New legislation in Mississippi requires a comprehensive screening program for 3- and 4-year-olds and districts are required to provide parent education programs. Head Start, a federally funded effort, serves the largest number of pre-kindergarten children, but it currently reaches only 15 percent to 20 percent of "at risk" children

Last year, the state-funded pre-kindergarten program in Texas served twice as many or more students than Head Start. State-funded preschool programs in Florida and South Carolina served as many or more students than Head Start. These three states have the most ambitious preschool programs. But, even the federally and state-funded programs in these states do not yet serve all "at risk" students (see Figures 1 and 2).

Indicators of the quality of preschool programs include teacher-to-student ratios, state policies on class size and curriculum, use of assessments for determining individual student needs, and the qualifications of preschool teachers and paraprofessionals. Characteristics of effective programs that have shown long-term benefits for children include:

- low child-to-staff ratios (10:1 recommended),
- staff trained in early childhood education and child development;
- curricula that are designed on the basis of the latest thinking and research in early childhood education.

In 1989, there were dramatic differences in the required student/teacher ratios in the SREB states—from 17:1 to 30:1 for kindergarten and from 8:1 to 22:1 for pre-kindergarten programs. All SREB states require certification of teachers in kindergarten programs and eight states require certificates to teach pre-kindergarten.

Table 1
STATE-FUNDED EDUCATIONAL PROGRAMS FOR PRE-KINDERGARTEN CHILDREN SREB STATES, 1989

	Program*	Program Description	Funding Method
Alabama	Community Education Programs (1987)	Developmental activities for 4 year olds with parental training as a part of the program (limited to five districts)	State appropriations – districts apply for funding.
Arkansas	Priority for State Board of Education in 1989-90. Governor has proposed model for identifying "at-risk" 4 year olds.	No Program	
Florida	Pre K Early Intervention Program (1986)	Developmentally appropriate program for 3 and 4 year-olds to provide intervention and increase education readiness for children.	Grants to districts based on state formula (may be subcontracted). Some programs in conjunction with Head Start, Title XX, or Chapter 1 programs.
	Early Childhood Migrant Program (1981)	Full day instructional program for 3 and 4 year-olds 5 days a week during school year. Program to develop social, physical, and mental skills; parental involvement.	Formula basis to districts (may be subcontracted).
Georgia	No Program		
Kentucky	Parent and Child Education Program (PACE) (1986)	All day 3 days/week developmental program for 3- and 4 year-olds with parents gaining basic academic and parenting skills.	Districts apply for grants (may be subcontracted)
Louisiana	Early Childhood Development Projects (1984)	Developmental program for "at risk" 4 year old children—90% are full day.	Awards to district – based on enrollment (may not be subcontracted).
Maryland	Extended Elementary Education Program (1979)	Half day developmental program for 4 year olds. Cooperative funding (i.e. local and federal Chapter 1 funds) is used to extend the state-funded programs.	Line item in state budget. Districts apply for funds. State funding for salaries only
Mississippi	Pre Kindergarten Preparatory Program (1990)	Identifies 3- and 4-year-olds not ready for kindergarten and provides readiness skills services to those children. Parental involvement.	Not yet funded
North Carolina	Pre Kindergarten Pilot Program (1989)	3 pilot centers for 3- and 4 year olds under direction of State Board of Education. Programs are full day, full year.	Combination funding: grants to districts and foundation support.
Oklahoma	Early Childhood Development Centers (1980)	Developmentally appropriate half day/full day program for 4-year-olds 4 days/week to provide early identification of needs. Fifth day is used for parent program. 36 programs/centers.	Competitive grants to schools maximum $27,000 (may be subcontracted)
South Carolina	Half day program for 4 year olds (1984)	Pre kindergarten programs offered in 89 of the 91 districts; 72 offer half day for 4-year-olds. All programs have parent participation.	Formula funded for salaries – districts provide building and overhead; some districts extended programs (may subcontract; none do so now).
Tennessee	No Program		
Texas	Pre kindergarten Program (1984)	Half day program for disadvantaged 4-year-olds	Funded per child with district contribution in accordance with state law. Some programs in conjunction with Head Start.
Virginia	No Program		
West Virginia	Child Development Programs (1987)	Programs in 10 counties that include full day program; home-based parent program, and half day home, half day center-based programs.	Grants to districts, some programs in conjunction with Head Start.

*Does not include state-funded programs for handicapped children

SOURCES: State departments of education, May 1990.
Marx, F. and Seligson, M. *Public School Early Childhood Study—State Survey*. Bank Street College of Education, 1988.

Use readiness assessments for all children prior to their beginning first grade and provide appropriate developmental programs to meet individual needs.

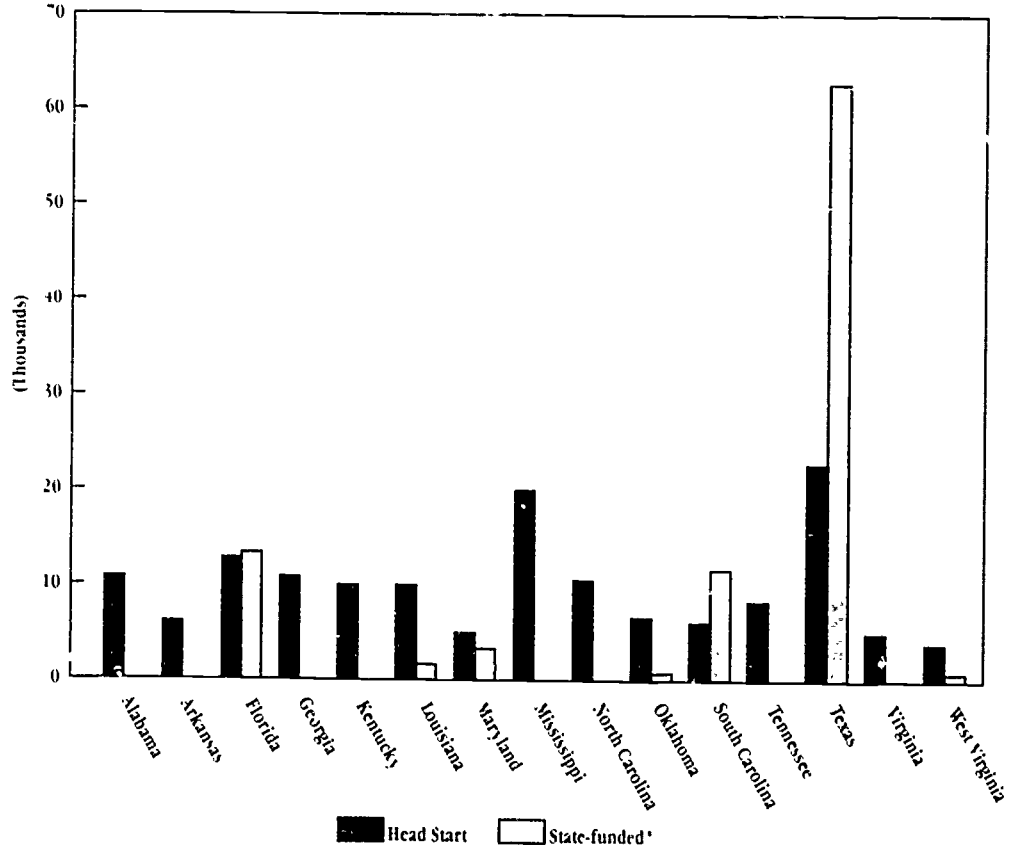
As states track progress toward having all children ready for the first grade, short-term indicators of progress may include the percentage of students deemed "ready" in different skill areas as shown by results of readiness assessments, retention rates in early grades, achievement, and special education placements.

Different assessment techniques and definitions of "readiness" mean that results are not comparable from state-to-state, but they can be used to look at progress within a state. South Carolina is following throughout the early grades the progress of children who have attended pre-kindergarten programs.

Improved readiness should reduce the percentage of first-graders who repeat the grade. The percentage of students retained in the first grade ranges from 5.1 percent in Kentucky to 14.0 percent in Louisiana. By focusing on readiness for school, states can move to new schemes that get away from failing 6-year-olds, such as the type of ungraded primary years adopted by Kentucky and Mississippi.

Improved preschool programs should result in higher achievement for students in elementary

Figure 1
ENROLLMENT IN PRE-KINDERGARTEN PROGRAMS SREB STATES, 1988-89



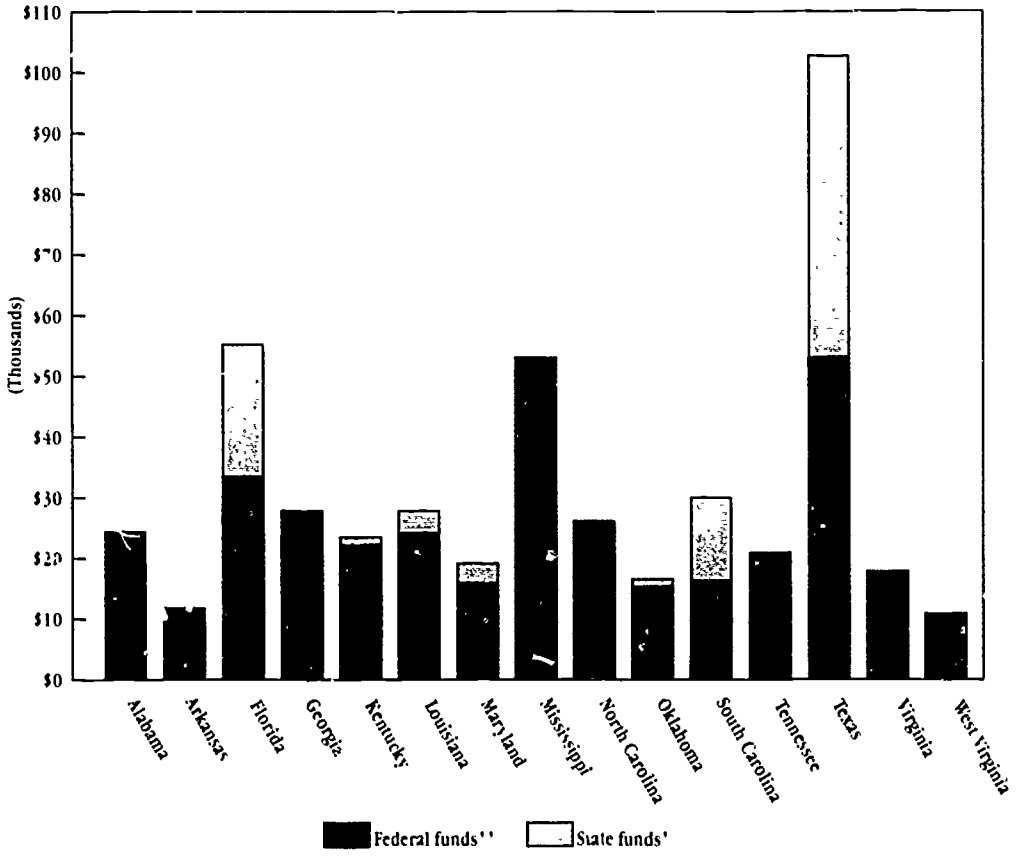
*Does not include programs for handicapped preschool aged children

SOURCES State departments of education SREB survey March 1990
Project Head Start Statistical Fact Sheet' U S D nt of Health and Human Services January 1990

and secondary school, fewer dropouts, and eventually more students prepared for and attending college. Studies that have followed students who attended quality pre-kindergarten and kindergarten programs into their early high school years have indicated that the effects are positive.

School readiness is not simply a school matter. It will require coordination of a broad range of educational, health, and social services at the state level and in local communities. In South Carolina, state coordination is handled through an agency in the governor's office. Virginia's General Assembly created and funded an integrated, multi-agency approach to deliver child care and early childhood development services. Kentucky's Educational Reform Act of 1990 calls for the development of Youth and Family Resource Centers to coordinate health and social services at school sites.

Figure 2
SPENDING ON PRE-KINDERGARTEN PROGRAMS FEDERAL AND STATE, 1989



*Does not include programs for handicapped preschool aged children
**Head Start
SOURCES State departments of education SREB survey, March 1990
Project Head Start Statistical Fact Sheet" U S Department of Health nd Human Services January 1990

BY THE YEAR 2000—

Student achievement for elementary and secondary students will be at national levels or higher.

Have states established and publicized student achievement goals? How are states assessing student achievement? Can results from state assessments be compared to national and regional results and results in other states? Do states know if the gaps in achievement of students from different backgrounds are being closed?

Establish and publicize specific student achievement goals by schools, districts, and states.

Raise steadily the percentages of students meeting academic standards set by schools, districts, and states at several grades throughout elementary and secondary schooling.

Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia have identified specific student achievement goals either through legislative actions or state board policies. Examples of these goals include:

- making elementary and secondary achievement competitive with other developed countries or raising achievement to meet or exceed national averages;
- increasing the percentage of students taking algebra taught by traditional or applied methods;
- increasing enrollment in and completion of upper-level science and/or mathematics courses;
- reducing the achievement gap between disadvantaged and other students;
- improving promotion rates in grades 9 through 12;
- improving high school graduation rates.

SREB states have set higher standards that include requiring minimum competencies for high school graduation and promotion, "no pass/no play" policies, and curricula leading to advanced or honors diplomas. All SREB states except Kentucky, Virginia, and West Virginia now, or will, require students to pass a minimum competency test to graduate from high school. All SREB states except Arkansas and Mississippi offer special recognition certificates or diplomas to students who complete and excel in additional academic courses.

West Virginia has developed learning outcomes and criteria of excellence for both its general and vocational education programs. Beginning with the graduating class of 1991, Louisiana will require students to achieve passing scores on exit examinations in English, language arts, writing, mathematics, science, and social studies.

Increase the percentages of students meeting standards or making gains on national achievement tests.

SREB states assess student achievement using state-developed tests and national tests. State-developed tests generally assess mastery of specific educational objectives. National tests generally measure achievement in broad content areas. Both types of tests are used in some states.

Test results are used for various purposes: instructional planning; evaluating districts, schools, and students; monitoring curricula; and assessing over time changes in students' achievement in the state.

Because tests used to measure student achievement vary and are compiled differently from state to state, comparisons are virtually impossible. Many of the tests have been administered to what is assumed are representative samples of students nationally and provide national benchmarks against which states can compare their students' performance. But, different states use different tests and methods for reporting scores and often do not administer the tests to students in the same grade level at the same time during the school year. These factors and the phenomenon of students in virtually every state being "above the

average" have created much skepticism over the results of these tests.

National tests used in the college admissions process (Scholastic Aptitude Test [SAT] and the American College Test [ACT]) are administered under similar conditions in each state. The SAT and ACT tests, however, are not administered to all students in a particular grade nor to a representative sample of students in a state. Who takes which test is influenced by the requirements of colleges and universities within the state, and these requirements are different in almost every state. At best, the SAT and ACT might represent that portion of high school seniors who are planning to pursue higher education—"the college-bound"—but even this statement is not true in some states.

In the absence of comparable data that represent all high school seniors, SAT and ACT results are sometimes used to compare performances of "college-bound seniors." Although using results in this way is not technically valid, the demand for comparative data about student achievement has taken precedence over the flaws. The widespread use of these measures, despite their limitations, illustrates the importance that policymakers, the media, and the public attach to regularly reported, state-level student achievement results that appear to make state-to-state comparisons.

Until there are comparable achievement results for representative samples of students from different states, it is likely that both the public and policymakers will continue to use what they perceive to be the best available information, inadequate as it may be.

There is a possible alternative that state leaders can help make a reality. Since 1969, the National Assessment of Educational Progress (NAEP) has regularly reported national measures of student achievement based on a nationwide sample of students in the 4th, 8th, and 11th grades. No information on a state's student achievement was provided.

Thirty-seven states have volunteered to participate in a pilot program conducted by the National Assessment of Educational Progress to collect state-by-state data in mathematics in 1990 and in mathematics and reading in 1992. Thirteen SREB states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, North Carolina, Oklahoma, South Carolina, Texas, Virginia, and West Virginia) signed up to participate. (South Carolina volunteered but did not participate due to Hurricane Hugo's disruption of the school year.)

This nationwide trial state assessment is very similar to the SREB-National Assessment project that more than half of the SREB states pioneered in 1985-1987. SREB states proved the feasibility and merit of state-by-state National Assessment at a time when this was being debated across the nation. Educational and government leaders in SREB states have a stake in helping the state National Assessment pilot program succeed and can have the most direct influence by urging their states' participation in the 1992 mathematics and reading assessment.

Narrow by one-half the unacceptably large gaps in achievement of students from different racial and ethnic backgrounds.

Reduce at the school, district, and state level the number of students whose achievement scores fall in the bottom one-fourth on national measures, and increase the number of students who score in the higher categories.

Report student achievement results by divisions such as quartiles.

Six states (Arkansas, Louisiana, Maryland, North Carolina, South Carolina, and Virginia) report statewide student achievement results by ethnicity and gender. Arkansas, Georgia, Louisiana, North Carolina, South Carolina, and Virginia report test data by quartiles or a comparable division.

These states differ in the levels at which they report achievement results. Three states (Arkansas, North Carolina, and South Carolina) produce reports that indicate the number of students scoring within quartiles or similar divisions and score distributions by gender and ethnicity for districts and individual schools.

It appears that each SREB state has the basic capability to produce reports as recommended by SREB, if it chooses to do so.

Increase the percentage of high schools offering Advanced Placement courses.

Increase the "passing" rate (score of 3 or above) on Advanced Placement examinations to the national average or higher.

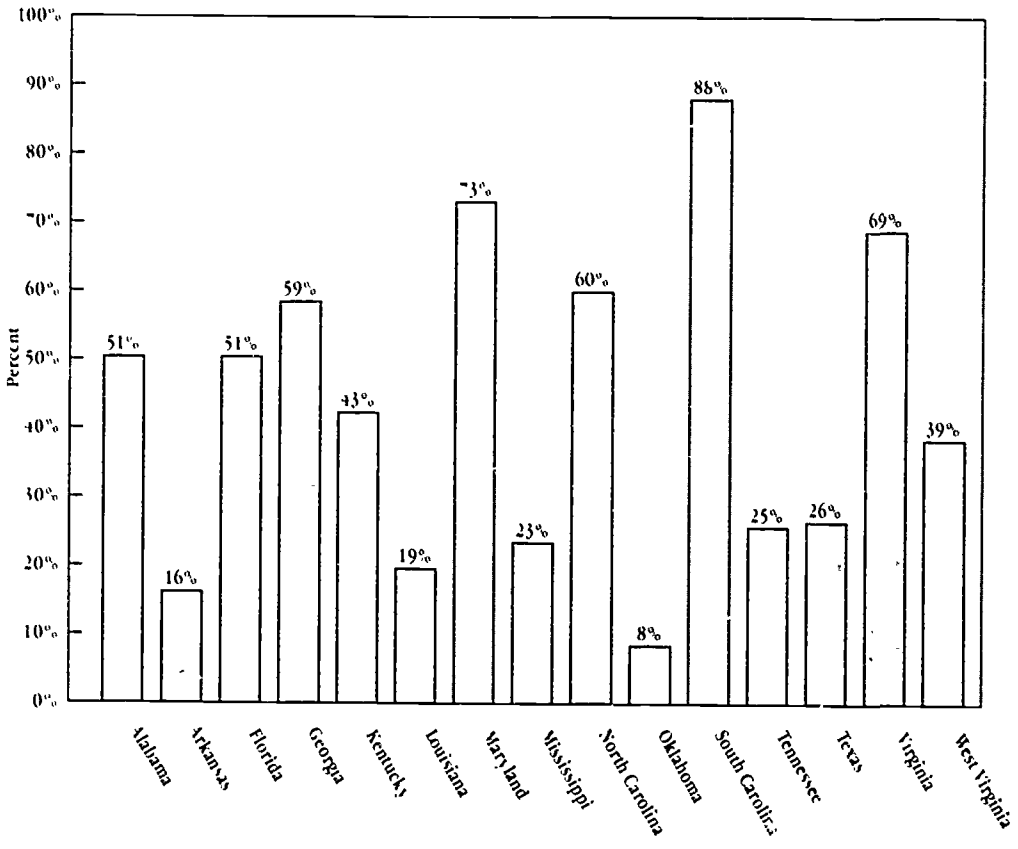
The Advanced Placement Program provides a way for high schools to offer college-level courses to talented students. The program represents high quality content and student performance, and provides a national standard for judging outcomes.

About 40 percent of the public high schools in the SREB states offered Advanced Placement courses during the 1988-89 school year. The number of public school students taking the examinations has more than doubled since 1984, increasing from about 43,000 students to almost 100,000. Much of this increase is due to special initiatives, including funding incentives to schools for students who earn satisfactory scores on the Advanced Placement examinations.*

The percentage of public high schools offering Advanced Placement courses exceeded 50 percent in seven states (Alabama, Florida, Georgia,

* The Advanced Placement Program in SREB States. *Regional Spotlight*. Southern Regional Education Board. October 1989.

Figure 3
PERCENTAGE OF PUBLIC SCHOOLS OFFERING ADVANCED PLACEMENT COURSES, 1989

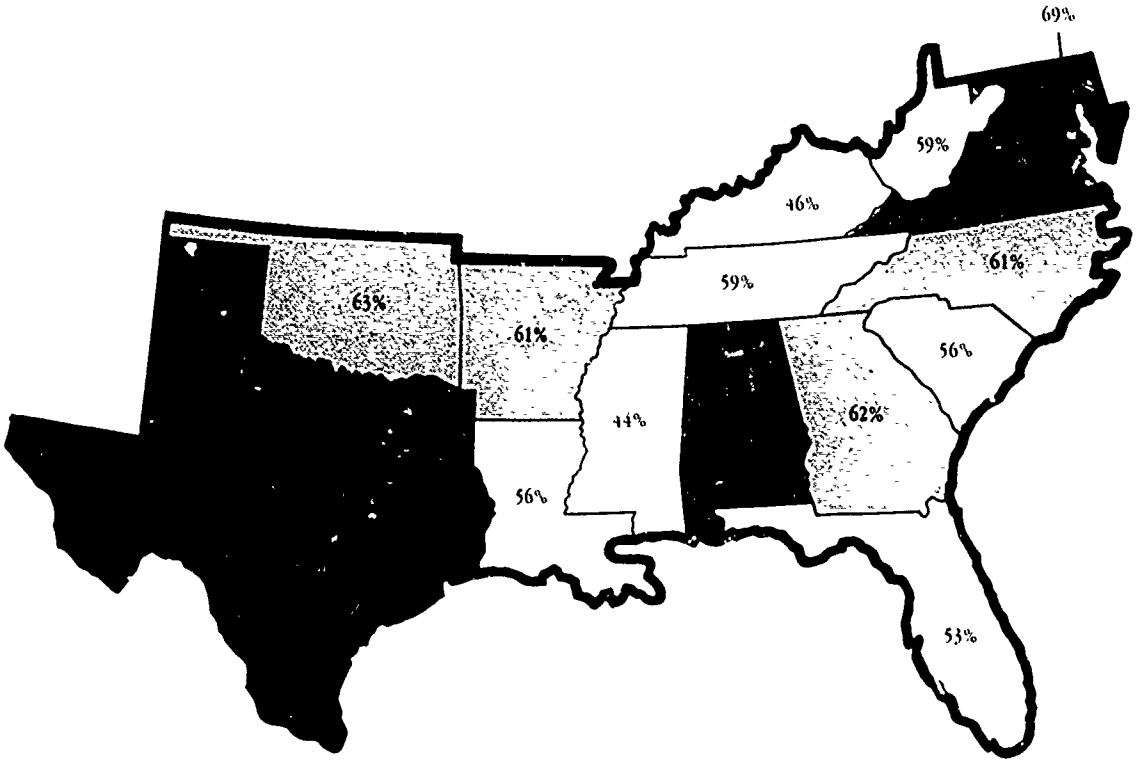


SOURCES: State departments of education, SREB survey, March 1990.
The College Board Advanced Placement Examination Statistics, May 1989

Maryland, North Carolina, South Carolina, and Virginia) (see Figure 3). In South Carolina, 88 percent of the schools are involved, which shows what could be achieved in many SREB states.

Students who score 3 or higher on the 5-point Advanced Placement grading scale can receive college credit for the course. Nationally, 61 percent of students achieve this score. In 1989, the percentages of public school students scoring 3 or better on the Advanced Placement examinations were higher than the national average of 61 percent in only four SREB states (Alabama, Maryland, Texas, and Virginia) (see Figure 4).

Figure 4
PERCENTAGE OF PUBLIC SCHOOL STUDENTS SCORING 3-5* ON ADVANCED PLACEMENT EXAMINATIONS SREB STATES, 1989



*A score of 3 or better is usually required to receive college credit for an Advanced Placement course

States with percentages above both the regional average of 61% and the national average of 65%.

States with percentages at or above the regional average of 61%.

States with percentages below regional average of 61%.

SOURCE: The College Board Advanced Placement Examination Statistics, May 1989

BY THE YEAR 2000—

The school dropout rate will be reduced by one-half.

What do we know about the reasons and rates that students drop out or graduate from high school in SREB states? What are SREB states doing to reduce dropout rates and raise graduation rates? What policies and structures do states have for addressing school completion and the dropout problem?

Establish a system to collect and report state dropout data by race and gender and by schools and districts according to a common definition.

Reduce the number of chronically absent students by 25 percent and raise the overall student attendance rate to 95 percent or higher.

It is not possible to compare accurately school dropout rates among states and, in many cases, it is not possible to compare dropout rates among school districts. There is neither a common definition of the term "dropout" nor a uniform method of collecting information at the state and national levels.

How is it then that one sees dropout rates reported and compared among states? The answer is that a "graduation rate" is calculated for each state by first dividing the number of high school graduates by the number of ninth-graders four years earlier. The "dropout" rate is determined by subtracting the graduation rate from 100 percent. This rate usually is adjusted by the United States Department of Education for "migration." But calculating the dropout rate in this way presents problems because it may not adequately account for students who take more than four years to complete high school or those who complete alternative secondary programs. Unfortunately, students also drop out of school before grade 9 and these students are not included in this count. The migration adjustment is an estimate. States with different policies about earning a high school equivalency certificate may have significantly different "graduation rates."

Nine SREB states (Alabama, Arkansas, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, and Oklahoma) are participating in the National Center for Education Statistics National Field Test to develop a common definition of "dropout" and a uniform method of collecting information on dropouts in grades 7-12. If the field test is successful, comparable state-by-state data will be available for the entire nation. States should be, and are, developing systems to track dropouts using the common definition in their local schools and districts.

A good state-level student information system is crucial. Information on dropouts by race/ethnicity, gender, and grade-level is important for targeting and designing dropout prevention programs. All SREB states—except Kentucky, which has a program that is contingent on funding—have indicated that they are or will be able to provide information on dropouts by ethnicity and gender. Currently nine SREB states—Alabama, Arkansas, Florida, North Carolina, Oklahoma, South Carolina, Texas, Virginia, and West Virginia—report that they have information on dropouts in their states by race/ethnicity, gender, and grade level. Georgia and Kentucky have that information only by gender and grade level. Four states indicate that they plan to collect that information in the future: Louisiana and Maryland by 1990-91, Mississippi by 1993-94, and Tennessee by 1994-95.

Risk factors associated with dropping out include attendance problems; low grade-point averages or failure in English, mathematics, or science, and discipline problems. The U.S. Department of Education has found that among these, "a powerful predictor of whether a student would eventually drop out is the attendance record during the first four months of the tenth grade." Yet, only Kentucky and Virginia report that they collect information at the state level on individual student absenteeism. Louisiana and West Virginia indicate that they plan to collect such information in the future. Only Louisiana and Maryland have indicated that they have a state definition of "chronically or excessively absent."

Develop statewide and local plans for reducing dropouts—plans that spell out what schools and governmental agencies will do and that provide incentives for making substantial progress.

Provide funding to develop programs that identify and help at-risk students, beginning in early grades and continuing through high school completion.

The nature and extent of state assistance provided to schools and districts as they develop dropout prevention programs varies greatly from state to state. At least eight states publish and disseminate information on state dropout prevention efforts. Most of the guides describe the characteristics of dropouts in the particular state. Some guides describe interventions to target those characteristics. Guides in Alabama and West Virginia provide the number of dropouts by gender, race, attendance patterns; when they dropped out; achievement scores; grade average; number of grades repeated; and socioeconomic status. South Carolina and Florida both publish guides describing the required components and procedures of a dropout reduction plan. Kentucky's guide explains how schools can submit proposals for state dropout prevention funds and suggests ways in which parents and businesses can help students to complete school. Georgia's guide describes successful dropout programs, listing each program's contact person, target group, strategies, and evaluation methods. Florida and South Carolina have state centers for disseminating information on dropout prevention.

Florida, Kentucky, North Carolina, and West Virginia have evaluated their state-level dropout prevention programs. Louisiana, Maryland, South Carolina, Texas, and Virginia have developed plans for evaluating current state programs for the first time. South Carolina is conducting an evaluation to determine successful interventions to recommend for implementation. The Texas evaluation process will evaluate model programs being considered for replication in the state.

North Carolina identified several characteristics of schools with low dropout rates. Among these are:

- having administrators who placed a high priority on dropout prevention;
- setting goals and evaluating and reporting on progress toward those goals.

Eight states—Florida, Louisiana, Kentucky, North Carolina, Oklahoma, South Carolina, Texas, and Virginia distribute dropout prevention funds on a competitive basis. Florida, Louisiana, North Carolina, Tennessee, and Virginia use formulas, as well as the competitive process, for allocating dropout prevention funds to school districts.

With limited funds, some states find that targeting schools or systems with the most severe dropout problems is an essential element in a plan to reduce the dropout rate. Kentucky, South Carolina, Tennessee, and Virginia follow this strategy. Georgia and Louisiana are planning this also.

To participate in Maryland's dropout prevention plan, schools must develop local plans that meet state criteria for funding and implementation. In Mississippi and North Carolina one of the criteria for school accreditation requires that the school reduce its dropout rate. Alabama and Kentucky will have a similar standard in their new performance-based accreditation systems.

To encourage school attendance, some states have raised the compulsory school attendance age, generally to age 18. Nine SREB states have passed laws denying driver's licenses to students who are not in school.

In addition to having good information about dropouts, potential dropouts, and appropriating sufficient funds for dropout prevention initiatives, two elements are critical to a state's efforts to reduce its dropout rate—a goal and a plan for reaching that goal. All SREB states have developed goals for reducing the school dropout rate or increasing the percentage of students who graduate (see Table 2).

If schools could solve the dropout problems alone, many would have done so already. In addition to school-based efforts, most SREB states administer a variety of programs for "at-risk" populations through governors' offices, labor departments, employment commissions, transportation or highway departments, departments of human resources or services, the judicial sys-

Table 2
SREB STATE GOALS FOR REDUCING THE HIGH SCHOOL DROPOUT RATE AND DEVELOPMENT OF STATE PLANS OF ACTIONS

	Goal	Has State Plan of Action Been Developed?
Alabama	To reduce the number of dropouts to 2,000 by the year 2000	Yes
Arkansas	To reduce the dropout rate by one half by the year 2000	Being developed
Florida	To reduce the dropout rate to 4% or less by 1995	Yes
Georgia	To reduce the dropout rate by one half.	Being Developed
Kentucky	To reduce the dropout rate by one half by the year 2000.	Yes
Louisiana	Expressed in terms of high school completion By the year 2000, 80% or more of Louisiana high school students will graduate with a regular high school diploma.	Being developed
Maryland	To increase the number of students graduating from high school. (No quantifiable target has been set)	No
Mississippi	To reduce the school dropout rate by one half by the year 2001	Yes
North Carolina	To reduce by one half, from 1985 to 1993, the dropout rate in every school district	Yes
Oklahoma	At least 90 percent of students entering first grade each year will ultimately graduate from high school.	No
South Carolina	To reduce the dropout rate by one half by the year 2000	Yes
Tennessee	Expressed in terms of high school completion By the year 2000, the statewide graduation rate shall be at least 80 percent	Yes
Texas	To reduce dropout rate to five percent by 1997-98	Yes
Virginia	No school division shall have a dropout rate higher than the present statewide average and the present average will be reduced by one-half by the year 2000	Yes
West Virginia	Expressed in terms of high school completion. By the year 1990, the percentage of students who graduate will increase to 90 percent.	No

SOURCES State departments of education SREB survey March 1990 Gale F Gaines *Educational Goals in SREB States* SREB 1990

tem, finance departments, or health departments. Efforts to coordinate these activities with school dropout prevention programs are too often lacking.

Increase the percentage of students who complete high school programs especially the percentage receiving high school diplomas (for example, 85 percent or more of the entering ninth-graders).

All SREB states need to know graduation rates for their high school students. Several SREB states have set goals for these rates. For example, Oklahoma has set a goal of 90 percent of its first-graders graduating from high school. Louisiana has set a goal of 80 percent of its students getting a regular high school diploma. The national goal endorsed by the president and the governors is that 90 percent of students will graduate from high school. The U.S. Department of Education's "Wall Chart" publishes graduation rates on the percentage of students in grade 9 who receive a regular high school diploma four years later (see Table 3). Efforts of the National Center of Education Statistics and the Council of Chief State School Officers are aimed at making state graduation rates more comparable than they are now. Students who receive regular diplomas will be reported apart from students who obtain credentials through high school equivalency programs, or the GED, or receive certificates of attendance. These steps will lead to greater comparability and help end confusion about graduation rates.

In two-thirds of SREB states a smaller percentage of ninth- grade high school students receive a regular diploma in four years than the national average (71 percent) according to the U.S. Department of Education. SREB states need to know how many students by race/ethnicity and gender

complete a regular high school program, how many complete a GED, and how many receive some other recognition of high school completion. Definitions and data collection procedures need to be comparable from state to state. As better student information systems are implemented, states will know more about student progress through the education pipeline.

Table 3
HIGH SCHOOL GRADUATION RATES FOR SREB STATES 1982, 1987, AND 1988[1]

States	1982	1987	1988	Availability of State Information on 1988-89 Graduates by: Race	Gender
Alabama	63.4%	70.2%	74.9%	yes	yes
Arkansas	73.4	77.5	77.2	yes	yes
Florida[2]	60.2	58.6	58.0	yes	yes
Georgia	65.0	62.5	61.0	no	no
Kentucky	65.9	67.4	69.0	no	no
Louisiana	52.9	60.1	61.4	yes	yes
Maryland	74.8	74.5	74.1	no	yes
Mississippi	61.3	64.8	66.9	no	yes
North Carolina	67.1	67.8	66.7	yes	yes
Oklahoma	70.8	72.6	71.7	no	no
South Carolina	63.8	66.9	64.6	no	no
Tennessee	67.8	67.8	69.3	yes	yes
Texas	63.6	65.1	65.3	yes	yes
Virginia	73.8	74.0	71.6	yes	yes
West Virginia	66.3	76.2	77.3	no	yes

[1] Graduation rates are for public schools only. The adjusted rates are calculated by dividing the number of public high school graduates by the public ninth grade enrollment four years earlier. Ninth grade enrollments include a prorated portion of the secondary school students who are unclassified by grade. Graduation rates are also corrected for interstate population migration.
[2] U.S. Department of Education notes that Florida uses different information for determining the graduation rate than that used for other states in the rates reported here.
SOURCES: State departments of education, SREB survey, March 1990; U.S. Department of Education, *State Education Performance Chart*, 1982-1988 and 1982-1989.

BY THE YEAR 2000—

90 percent of adults will have a high school diploma or equivalency.

About 80 percent of working-age adults in SREB states have a high school diploma or equivalency—more than six million do not. For blacks and Hispanics in this age group the figures are lower—about 70 percent and 57 percent, respectively. Obviously, over time, if school dropout numbers are reduced, a growing percentage of young adults will have a high school education. However, without efforts to enroll more of the six million adults without a high school diploma in programs to increase their skills and knowledge, the South's labor force in the year 2000 will fall short.

Table 4
GENERAL EDUCATION DEVELOPMENT (GED) CREDENTIALS ISSUED SREB STATES, 1985-1989

	1985	1989	Percent Change 1985-1989
United States	427,075	350,523	-17.9%
SREB States	172,172	155,624	-9.6
Alabama	7,154	6,907	-3.5
Arkansas	6,646	6,341	-4.6
Florida*	24,188	25,279	4.5
Georgia*	12,500	12,686	1.5
Kentucky	9,537	10,463	9.7
Louisiana	10,177	6,601	-35.1
Maryland	6,758	5,412	-19.9
Mississippi	7,051	5,466	-22.5
North Carolina	13,566	13,552	-0.1
Oklahoma	6,251	4,485	-28.3
South Carolina	4,859	4,702	-3.2
Tennessee*	9,374	9,093	-3.0
Texas	39,479	33,187	-15.9
Virginia	9,328	8,446	-9.5
West Virginia	5,304	3,004	-43.4

*State totals may be incomplete because high schools also issue credentials based on General Education Development (GED) test results
SOURCE: American Council on Education, *The 1989 GED Statistical Report*, May 1990

Increase the percent of adults enrolling in and completing the General Educational Development Program (GED).

Use assessment results with young adults to determine the skills and knowledge being gained (or not gained).

Increase dramatically the number of employees participating in business-sponsored "learn and earn" programs.

If all the GED high school equivalency credentials currently earned each year in SREB states had been issued to persons in the pool of more than six million working-age adults without a high school diploma, only 2.5 percent would have earned high school equivalency certificates. But two-thirds of all GEDs are earned by young persons under 25 years of age. The disturbing fact is that less than 1 of 100 working-age adults who drop out of high school earn a high school equivalency after they are 25 years old. In 1989, almost 10 percent fewer GED credentials were issued in SREB states than in 1985 (see Table 4). One-third of the more than 155,000 credentials were issued to persons under 20 years of age (see Table 5).

All SREB states are required to provide state and local funds to match federal funds provided through the Adult Education Act for offering programs in literacy training and education for adults. SREB states have taken various approaches to providing adult basic education instruction with these funds. All have programs designed to motivate adults to return to school to complete an alternative program or to earn a GED. Tennessee not only provides adult basic education and GED preparation, but also has several adult high schools offering regular high school diplomas. Arkansas and Kentucky also are developing alternative school programs for adults.

Tests used to assess adult literacy vary. The Test of Adult Basic Education and the Adult Basic Learning Examination are most frequently used.

Table 5
GENERAL EDUCATION DEVELOPMENT (GED) CREDENTIALS ISSUED, BY AGE SREB STATES, 1989

	Age Groups, by Percent					
	17 and Under	18-19	20-24	25-29	30-39	40 and Over
United States*	7.8%	27.5%	23 7%	13 4%	15 1%	10.8%
SREB States	8.6	27 1	22.1	12 3	18.6	12 3
Alabama	6 1	37.6	20.3	11.4	14.7	9.9
Arkansas	10.8	22.4	18 5	13 6	19 2	15.4
Florida	5 7	29.2	27 3	11 4	13.5	12 8
Georgia	8.8	33.9	21.9	10 6	15 0	9 8
Kentucky	1 1	15 2	30.2	13.6	22.7	17 3
Louisiana	Not Reported					
Maryland	14.5	24 0	26.0	12 3	14 8	8 3
Mississippi	15 2	26 6	18.2	10.2	16.7	10.8
North Carolina	5.4	24.4	25.3	11.9	18.2	14 7
Oklahoma	2 8	23.3	22.8	15 7	21 6	13.6
South Carolina	17 5	25.7	17.6	11.2	16.9	11.2
Tennessee	1 9	31.9	19 8	13 4	18.7	14 2
Texas	12.0	27.2	21 0	12.8	17.4	9.6
Virginia	9.0	30.7	22.3	12.0	16.5	9.5
West Virginia	9.5	25.9	18 3	11.7	19.4	15.0

*United States includes all U S territories
May not total 100% due to rounding
SOURCE American Council on Education, *The 1989 GED Statistical Report*, May 1990

Louisiana uses the California Achievement Test to measure progress of adult students and evaluate local programs. Only three states (Virginia, Louisiana, and North Carolina) reported having statewide results from such assessments. In the other states, student assessment results are maintained at the local centers or agencies where programs are offered.

Business and education partnerships aimed toward workplace literacy efforts and incentives to employees to complete or further their education are necessary to ensure that the work force of tomorrow is better prepared. Eight SREB states (Alabama, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, Virginia, and West Virginia) are developing workplace literacy programs. These states provide technical and financial assistance, public awareness activities, and incentives to employees who complete GED credentials. Workplace literacy programs are good investments. Businesses and industries, states, and the nation benefit from employees with improved ability to produce quality goods and services.

BY THE YEAR 2000—

4 of every 5 students entering college will be ready to begin college-level work.

Have state requirements for college-level study in public colleges and universities and college preparatory curricula in high schools been defined? What percentage of high school graduates attend institutions of higher education? What percentage of students entering college are being placed in remedial courses? Do colleges and universities provide feedback to high schools on the success rates of their recent graduates? Are the gaps between college-going rates for blacks, Hispanics, other minorities, and their white counterparts being narrowed?

SREB's *Reaching the Goal of Readiness for College* posed these and other questions about getting students ready for college. More than one in three first-time freshmen in public colleges in the SREB states are placed in one or more remedial courses (see Table 6). How large is this problem? Consider that the total number of freshmen taking remedial courses in SREB states is roughly equivalent to all of the college freshmen enrolled in Alabama, Georgia, Kentucky, Tennessee, and North Carolina.

Table 6
AVERAGE PERCENT OF ENTERING FRESHMEN NEEDING REMEDIAL COURSES IN READING, WRITING, OR MATHEMATICS PUBLIC INSTITUTIONS, SREB STATES, 1988-89

	2-Year Institutions			4-Year Institutions			Total		
	Reading	Writing	Math	Reading	Writing	Math	Reading	Writing	Math
SREB States	32%	34%	47%	23%	24%	34%	29%	30%	42%
Alabama	32	35	45	23	20	45	30	30	41
Arkansas	43	40	65	39	38	52	41	39	59
Florida*	24	25	47	–	–	–	24	25	47
Georgia	32	53	52	21	25	31	24	34	38
Kentucky	22	28	47	20	27	37	21	27	43
Louisiana	24	30	55	20	25	46	21	27	48
Maryland	23	39	46	23	23	26	22	31	36
Mississippi	32	20	38	17	21	26	22	21	30
North Carolina	35	39	44	28	21	24	34	35	38
Oklahoma	40	34	52	27	12	20	37	27	42
South Carolina	23	24	31	31	18	34	24	22	32
Tennessee	47	41	67	17	17	24	34	31	49
Texas	36	34	51	28	26	38	35	32	48
Virginia	29	30	37	27	25	33	28	29	35
West Virginia	41	52	69	23	29	47	26	33	50

*Florida law prohibits four-year institutions from offering remedial developmental courses.

NOTE: These data should be interpreted with caution because the number of responding institutions and their individual missions influence the percentages of students in remedial developmental programs.

SOURCE: SREB survey of remedial education at institutions of higher education, 1989.

Establish standards that include a core of required academic high school courses for admission into four-year colleges and universities.

Most SREB states now require students to meet minimum course requirements for admission to public four-year colleges and universities. In those states where statewide policies have not been enacted, most four-year institutions have established minimum high school course requirements for admissions, and efforts are made by higher education coordinating boards to encourage high school students to enroll in and complete a "college preparatory" curriculum.

For the most part, policies on minimum high school courses required for college include 4 years of English, 3 years of social studies, 3 years of mathematics, 3 years of science, and 2 years of foreign language.

Completing "college preparatory" courses alone will not assure readiness for college. Unless the courses taken develop high order competencies in reading, writing, speaking, mathematical and scientific reasoning, and good study skills, too many students entering college will continue to be unprepared for college-level courses. A Georgia study showed that, even among the state's high school graduates who earned "college preparatory" diplomas, about one in five students entering the University System were required to take at least one remedial course.

In Alabama, Georgia, Tennessee, Mississippi, and South Carolina, cooperative projects between schools and colleges and the College Board are underway. These projects seek to improve college preparatory curricula by implementing recommendations contained in The College Board's *Academic Preparation for College*. A key characteristic of these projects is bringing together school and college faculties to improve methods for teaching the academic skills necessary for success in high school, college, and the workplace.

Little statewide data is available on the mix of courses high school students actually take. While individual schools may monitor the number of students in college preparatory, general, or vocational curricula, this information often is not analyzed at the state level. Few states can report the number or percentage of students by curricula. Data on course enrollments are gathered in most states, but the information generally is not gathered by grade level or ethnicity or gender within grade level. Without such information, it will be difficult for states to determine if more students are taking the necessary courses in the early high school years to prepare for the more rigorous college preparatory courses.

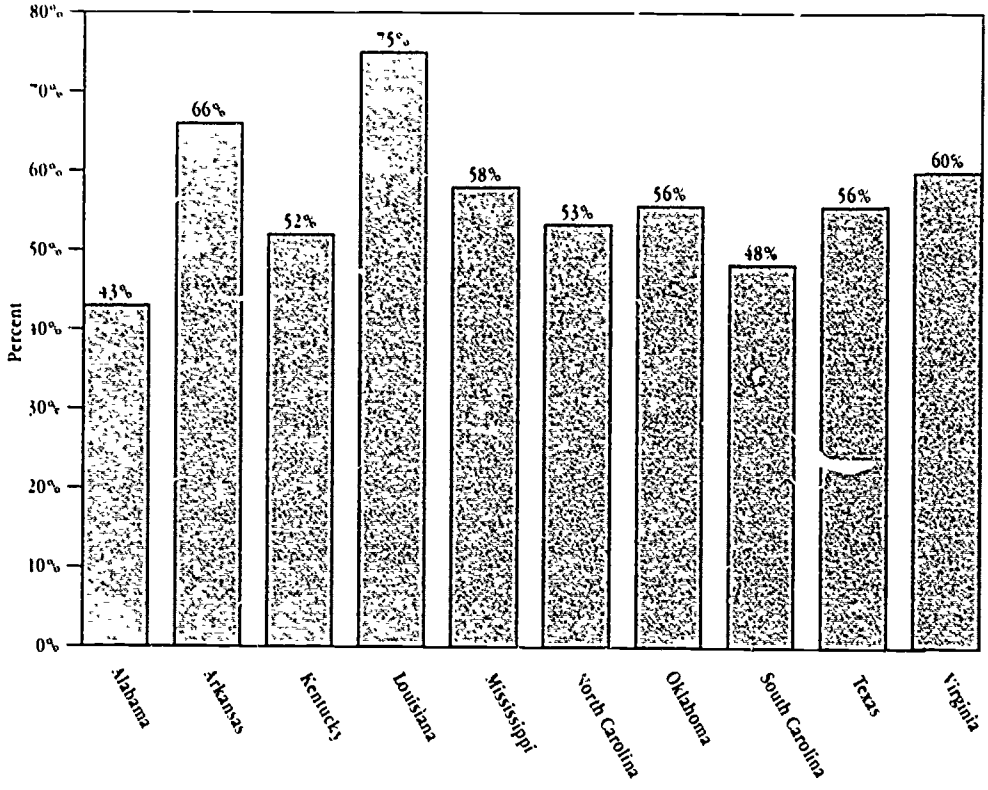
Increase the percentage of students taking Algebra I by grade 10 and increase the percentage of high school students enrolled in academic or college preparatory curriculum.

Increasing the percentage of students taking Algebra I by grade 10 illustrates an indicator which is based on courses that students *choose* to take. Algebra I is a "gatekeeper" course. Students who do not complete the course by grade 10 are less likely to complete higher level mathematics courses in high school, are less likely to fully develop the mathematical reasoning skills necessary for college; and are less likely to enroll in college. Yet, none of the SREB states could answer the question, "What percentage of students complete Algebra I by the end of the tenth grade?"

A Council of Chief State School Officers' study, in which 29 states participated, provides state-by-state comparisons on the percentage of high school students enrolled in some type of mathematics course (from general math to calculus). The median percentage enrolled in any type of mathematics course in a given year was 82 percent. Put another way, almost 20 percent of high school students are probably not enrolled in any mathematics courses this year; even fewer than 80 percent are taking Algebra I or higher level math courses. In the 10 SREB states participating in this study, about three in five high school students were taking Algebra I or higher level mathematics courses (see Figure 5).

The National Assessment of Educational Progress has reported that the highest mathematics course that most high school students have taken is Algebra II. Black and Hispanic students are more than one-third less likely to have taken Algebra II than white students.

Figure 5
PERCENT OF STUDENTS ENROLLED IN FORMAL MATHEMATICS* IN 1988-89 SELECTED† SREB STATES



*Formal Math includes Algebra I and II, Geometry, Trigonometry, Calculus, and Advanced Placement
†Five SREB states (Florida, Georgia, Maryland, Tennessee, and West Virginia) did not report mathematics course enrollments for 1988-89
SOURCE: State by State Indicators of Science and Mathematics Education Preliminary Report, Council of Chief State School Officers, State Education Assessment Center, October 1989, Washington, DC

Establish appropriate standards for beginning college-level study and require successful completion of non-credit remedial education courses for students not meeting degree credit standards.

Approaches taken in SREB states for assessment and placement of students entering college include:

- Statewide initiatives that require public institutions of higher education to use uniform measures to assess basic skills of entering students and that establish minimum "passing" scores. (Arkansas, Florida, Georgia, Tennessee, and Texas)
- Identification of academic skills that all students at public institutions must have to begin college-level study but individual institutions determine what assessment instruments will be used and the criteria for placement into remedial courses. (Virginia)
- Individual institutions establish local policies to place students into remedial or college-level courses. (Alabama, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, and West Virginia)

Almost every public four-year institution offers remedial/developmental programs for students identified as not ready for college-level work. Credit for such courses usually is not applicable toward the minimum number of credits required for a degree. The most frequently offered reme-

dial courses are in reading, writing, and mathematics.

Most states specify that institutions establish exit criteria for remedial/developmental programs. In Florida, for example, students in remedial/developmental programs must meet one of three exit requirements—successfully completing the course(s) in which the pre-college competencies are taught; passing criterion-referenced tests of the competencies; or meeting a cut-off score on an approved norm-referenced test. Students enrolled in remedial/developmental courses at Tennessee's public institutions must demonstrate their skills through a combination of course grades and scores on Tennessee's Academic Assessment Placement Program test.

Some states believe that a degree of "quality control" is maintained by requiring a "rising junior" examination to enroll in upper-division courses (Florida, Georgia, and Texas). New legislation in Mississippi calls for development and implementation of a "rising junior" test.

Table 7
COLLEGE-READINESS REPORTING PROGRAMS SREB STATES, 1989

	Established by	Institutions Involved	Type of Reporting
Arkansas	Board Policy	All Public Colleges/Universities	Placement
Florida	Legislative Mandate	All Public Colleges/Universities	Placement and Performance
Georgia	System Procedure	All Public Colleges/Universities	Placement and Performance
Kentucky*	Board Policy	All Public Colleges/Universities	Placement and Performance
Louisiana	Legislative Mandate	All Public Colleges/Universities	Placement and Performance
Maryland	System Procedure	State Universities and Colleges	Performance
North Carolina	University Initiative	University of North Carolina System	Placement and Performance
South Carolina	Legislative Mandate	All Colleges/ Universities	Performance
Tennessee			
Board of Regents	Board Policy	University/Community College System	Placement
University of Tennessee	System Procedure	University of Tennessee System	Placement and Performance
Texas	Legislative Mandate	All Public Colleges/Universities	Placement and Performance
Virginia*	Secretary of Education	All Public Colleges/Universities	—

*Under Development

SOURCES "Reporting to High Schools on Students' Readiness for College An Idea Worth Developing" *Regional Spotlight*, SREB, June 1988
State departments of education, SREB survey, March 1990

Colleges and universities can assist in improving the preparation for college by providing better information to high schools on their student's performance and success in college. Colleges and universities in 11 SREB states provide such annual reports to high schools (see Table ").

Tennessee's and Louisiana's annual report on first-time entering freshmen are good illustrations of "feedback" from colleges to schools. The Louisiana report, for example, reveals how many of each high school's graduates enrolled in Louisiana's public colleges and universities, how many were required to take remedial/developmental courses, and the number and percent of these students who completed the first term in good academic standing. The same information is provided on students who went directly into the regular college curriculum. A state summary shows by scores on admission tests the success rates of students required to take remedial courses and those who went directly into the regular college curriculum.

In many states, little or no information is available on the status or progress of students from different ethnic groups, course-taking patterns of students by grade level, and percentages of high school students enrolled in or completing college preparatory curricula.

States need to provide more and better information by gender, minority group membership, grade level, and high school courses completed to evaluate the effectiveness of efforts to reduce disparities.

BY THE YEAR 2000—

Significant gains will be achieved in the mathematics, sciences, and communications competencies of vocational education students.

A dramatic upgrading of the educational requirements for jobs is underway. Major improvements in basic competencies in communication, computation, and applied sciences are fundamental to prepare high school graduates for immediate employment or for further learning. The academic skills of students completing the general and vocational curricula, who currently represent 50 percent or more of the high school graduates, must be improved.

Raise the basic reading, mathematics and science competencies of students who complete secondary vocational education programs to national averages or higher as measured by programs such as the National Assessment of Educational Progress (for example, increase the percentage of students reading at the Adept or higher level on the National Assessment for demonstrating the mathematics skills to solve moderately complex procedures).

Establish more precise, demanding, and measurable basic competency, placement, and technical objectives for vocational students.

Measuring states' progress on improving academic achievement of vocational students is difficult because there is no common definition of what is required to complete a high school vocational program. For example, four states—Arkansas, Maryland, Mississippi, and Texas—have no guidelines for determining who is a vocational "completer"; the decision is made at the individual district level. Eleven states classify students according to the total number of vocational course credits completed; however, the number of credits required ranges from one to eight.

Only four states—Florida, Georgia, Louisiana, and Oklahoma—currently collect information at the state level on vocational courses taken. Three states—North Carolina, South Carolina, and Tennessee—plan to collect such information.

In all but one SREB state, a student can be a vocational "completer" and still take only general mathematics courses; in eight states, a student can be a "vocational graduate" without taking a single laboratory science course. Only Louisiana requires all students to complete a mathematics course at the Algebra I level or above. The current level of mathematics and science courses required of vocational students is inadequate to prepare them for employment or continuing education in the workplace or at postsecondary educational institutions. This was verified in an SREB survey of over 1,700 vocational graduates from 33 school districts in 13 states. Only one year after high school, one in four of these graduates already expressed need for more emphasis on mathematics in high school programs of study. Four in ten reported a need for more science.

Ten SREB states report they have established minimum statewide technical competencies for vocational completers; no state reported having established similar standards for the basic academic competencies needed by vocational completers for continued learning in either a work or educational setting. Four states—Alabama, North Carolina, South Carolina, and West Virginia—have developed banks of test items that local teachers can use to assess student performance on technical competencies. South Carolina administers on a voluntary basis a statewide competency-based testing program to graduates from 18 different vocational fields (see Table 8).

States have little information on the basic competency achievement of students who take a significant block of their high school coursework in a single vocational concentration. A 1987 SREB assessment of mathematics involved representative samples of students in eight SREB states taking the National Assessment mathematics test. Students were asked to identify whether their high school program of study was primarily college preparatory, general, or vocational. Students describing themselves as primarily in a vocational program did less well than college preparatory students, but had mathematics scores that were

Table 8
DEFINITIONS OF HIGH SCHOOL VOCATIONAL "COMPLETERS"

	Number Vocational Credits	Established Statewide Minimum Technical Competencies	Assessment of Minimum Technical Competency
Alabama	2 to 6 in a major	Varies by program	State Item Bank Locally administered and scored
Arkansas	Locally determined	Varies by program	Locally determined
Florida	1 to 8 in a major	Varies by program	Locally determined
Georgia[1]	4 with 3 in a major	Varies by program	Locally determined
Kentucky	4 in a major	Varies by program	Locally determined
Louisiana	2 to 6 in a major	No	–
Maryland	Locally Determined	No	–
Mississippi	Locally Determined	Varies by program	Locally determined
North Carolina	2 to 4 in a major	Varies by program	State Item Bank Locally administered and scored
Oklahoma	3 to 6 in a major	Varies by program	State-managed and scored competency test
South Carolina[2]	2 to 6 in a major	Varies by program	State-managed and scored competency test
Tennessee	4 in a major	No	–
Texas	Locally Determined	No	–
Virginia	2 to 8 in a major	No	–
West Virginia[3]	3 to 4 in a major	Varies by program	State Item Bank Locally administered and scored

[1]Georgia college preparatory graduates can be designated a vocational "completer" with four vocational credits The state encourages local systems to require these in a planned vocational concentration Georgia is developing tests to assess technical and academic competencies of vocational "completers"
[2]South Carolina has developed competency tests in 18 vocational programs/courses and in 1989 tested 10,698 students from 81 of 104 school districts
[3]West Virginia requires four credits in a major for a two year program and three credits in a one year program West Virginia in 1989 administered an occupational competency test and academic achievement test to a sample of vocational graduates for the purpose of setting possible minimum scores for future graduates
SOURCE State departments of education, SREB survey, March 1990

not greatly different from students who said they were in the general program. In six states—Arkansas, Florida, North Carolina, South Carolina, Virginia, and West Virginia—the vocational students were above the average for all vocational students in the nation. But, "self-reports" tend to be unreliable and only eight SREB states participated in this study.

Another piece of information comes from National Assessment tests administered at the 33 pilot sites of the SREB-State Vocational Education Consortium. All SREB states, except Texas, are participating in the Consortium that is attempting to improve the achievement in reading, mathematics, and science of students enrolled in vocational education programs. Students who had taken four or more courses in a single vocational major (based on an analysis of transcripts), when compared to national self-reported vocational students, scored significantly higher in mathematics and reading achievement and the same in science (see Table 9). When compared to the national average of all high school students, Consortium pilot-site students were significantly lower in mathematics, reading, and science.

Students at the pilot-sites cannot be considered representative of students of their state or the region. However, comparing the performance of completers at these sites with national norms will show what could be achieved by vocational students elsewhere.

The SREB-State Vocational Education Consortium encourages each state to define vocational "completers" as students who complete at least four credits in an approved vocational major and also take three mathematics and three science courses, of which at least two in each category are equivalent to college preparatory courses or courses covering similar content through an applied process.

Table 9
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS READING, MATHEMATICS, AND SCIENCE SCORES BY TYPE OF HIGH SCHOOL CURRICULUM

	NAEP Score Average		
	Reading	Mathematics	Science
SREB/Vocational[1]	534	292.9	266.7
National/Vocational[2]	504	282.3	266.7
National/General[2]	537	288.0	270.6
National/College Preparatory[2]	591	317.7	308.1
National/Average[3]	549	300.7	287.1

[1]Defined by transcript analysis as students completing four or more courses in a vocational major area. Students at 33 pilot sites only, not a regionally representative sample
[2]National representative sample. Curriculum program defined by student self report
[3]Nationally representative sample. Average based on all students, all curriculum programs
SOURCES: National Assessment Project, 1987
SREB State Vocational Education Consortium

Establish targets for the percentage of students who complete vocational programs and are successfully placed in related jobs, the military, or pursue further education (for example, a state target of 80 percent or more may be a desirable goal).

Increase to the national average (now 50 percent) the percentage of students who complete three or more units of vocational education programs and continue their education within one year after high school graduation.

As a basis for judging the effectiveness and continuation of local vocational programs, seven SREB states—Alabama, Arkansas, Florida, Georgia, Kentucky, South Carolina, and West Virginia—have established targets for the numbers of vocational students getting jobs related to their education. The specific placement goals, and the basis for determining a successful placement, vary among the states. For example, in Alabama, Arkansas, and Florida, the goal is 70 percent successful placement, based on the number of graduates placed in related employment, the military, or in further education. Kentucky has a 90 percent placement goal, based on the number of available vocational graduates placed in employment. South Carolina requires that 50 percent of the available graduates must be placed in the area for which training was provided during the prior three years. Programs not meeting this requirement may be discontinued.

All SREB states, except Tennessee, have a statewide system for following up students completing vocational education programs to determine the percentage placed in related jobs, military, or postsecondary education. In 12 states, the follow-up is conducted annually for all students; in Maryland and Virginia, for a sample of students. The follow-up in nine states includes information about race/ethnicity and gender, and in two states information is available only by gender.

Three states—Kentucky, Georgia, and Louisiana—collect information on the proportion of students completing either three or more credits or four or more credits in a vocational major and the percentage of these continuing their education after high school. In Kentucky, 38 percent of students completing four courses in a vocational major were continuing their education; in Georgia, 46 percent of students completing three credits were continuing their education. A study of 1,700 vocational graduates in 13 states showed that about 41 percent were continuing their education in some form of postsecondary institution, 85 percent of these also were working full- or part-time.

Double the percentage of vocational education students who take one or more college preparatory mathematics courses, one or more college preparatory science courses, or courses specifically designed to teach similar concepts through an applied process.

No SREB state currently has information about the number of vocational graduates completing one or more mathematics and science courses at the college preparatory level.

A transcript study of over 1,500 students from the 33 sites of the SREB Vocational Education Consortium showed that among students who had completed at least four credits in a vocational major:

- Only 29 percent had completed three math credits with at least two earned in Algebra I or higher courses.
- Only 16 percent had earned three science credits with at least two in college preparatory lab science courses.
- Only 12 percent had completed three mathematics and three science courses.

Some states are implementing new courses that teach college preparatory level mathematics and science concepts through practical application. SREB found that in the SREB states, 355 high schools are offering an applied physics course and 361 schools are offering an applied mathematics course; only seven states account for nearly 90 percent of this effort—Georgia, Kentucky, North Carolina, Oklahoma, South Carolina, Tennessee, and Virginia (see Table 10).

Table 10
STATES OFFERING COLLEGE PREPARATORY LEVEL MATHEMATICS AND SCIENCE CONCEPTS THROUGH APPLIED PROCESS

	Physics		Mathematics	
	Number of Schools	Number of Students Enrolled	Number of Schools	Number of Students Enrolled
Alabama	16	320	8	200
Arkansas	8	120	2	30
Florida	5	160	5	340
Georgia	50	1,900	20	1,120
Kentucky	28	700	36	900
Louisiana	11	163	2	50
Maryland	12	—	3	—
Mississippi[1]	46	920	—	—
North Carolina[2]	53	1,200	100	4,400
Oklahoma	23	500	11	400
South Carolina	41	1,317	32	1,254
Tennessee	36	576	26	514
Texas	1	50	None	None
Virginia[3]	20	1,066	116	6,519
West Virginia	5	300	None	None
Total	355	9,192	361	15,727

[1]Mississippi has developed a diversified technology program that stresses physics concepts
[2]North Carolina has developed a mathematics course designed to teach higher level mathematics content in an applied context
[3]Virginia has developed a mathematics course designed to teach higher level mathematics in an applied context
SOURCES State departments of education, SREB survey, March 1990

Evaluate and revise the ways that vocational education teachers are prepared, licensed, and updated, with the emphasis on improving their academic competencies and their skills for teaching applied courses.

Most states have made, or plan to make, changes in teacher preparation and certification to improve vocational teachers' ability to reinforce academic competencies. All but four states—Alabama, Louisiana, Texas, and Virginia—reported they have revised teacher certification during the past five years to strengthen the emphasis on academic preparation of vocational teachers. All states, except Louisiana, report changing teacher education programs during the past five years to improve the ability of vocational teachers to reinforce academic competencies. However, it appears no SREB state is carrying out evaluations to determine if the revisions have produced the necessary changes in the classroom.

Several states provide staff development for upgrading the ability of vocational teachers to stress academic content in vocational instruction. For example, North Carolina now requires that majors in vocational education college programs obtain a second major in one of the following areas: mathematics, science, social studies, communications, or social sciences. South Carolina has revised the methods course required of trade and industrial teachers to emphasize teaching basic skills as a part of the instructional process.

BY THE YEAR 2000—

The percentage of adults who have attended college or earned two-year, four-year, and graduate degrees will be at the national averages or higher.

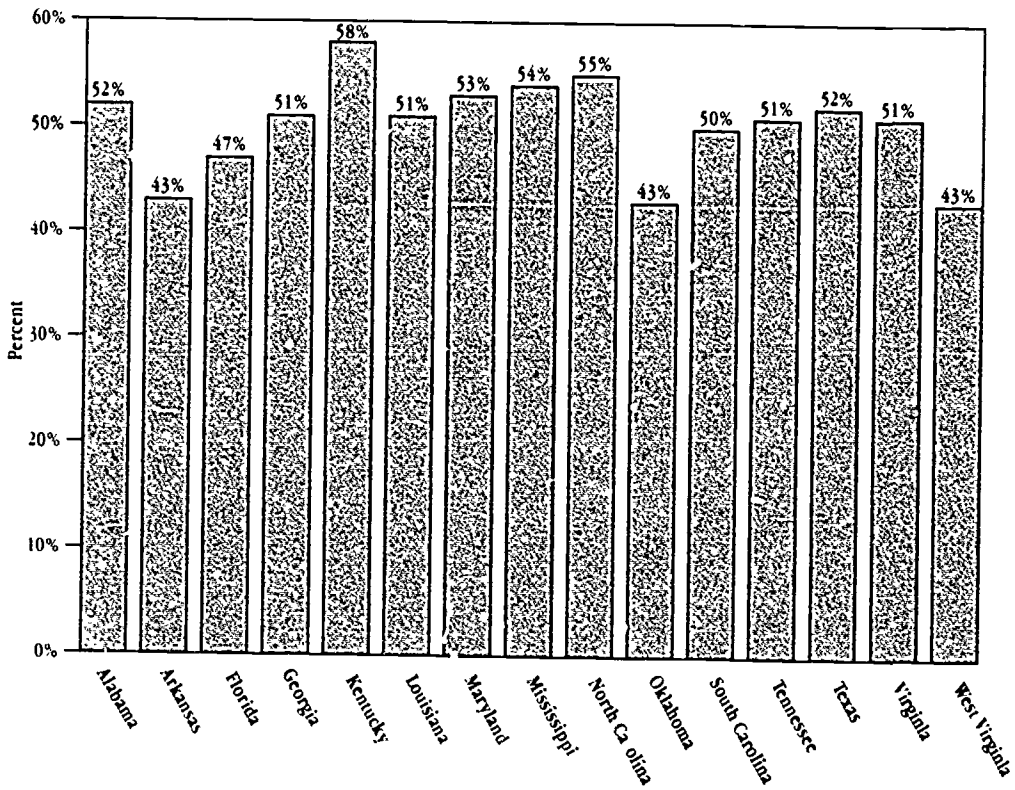
Narrow the gaps among citizens of different races in their college attendance and graduation rates.

Increase the overall college participation rates.

SREB states continue to trail the nation in the levels of collegiate education for all its citizens.

- Of all persons between the ages of 25 and 55 in the United States, 45 of 100 whites, 32 of 100 blacks, and 25 of 100 Hispanics complete some college.
- In the SREB states, 42 of 100 whites, 27 of 100 blacks, and 26 of 100 Hispanics reached the same level of educational attainment.
- Whites in the work force are one and one-half times more likely to have completed some college than blacks or Hispanics.
- About 23 percent of 18- to 24-year-olds in the

Figure 6
ESTIMATED COLLEGE ATTENDANCE RATES SREB STATES, 1988



CAUTION This table illustrates one method of estimating college attendance rates based on US Department of Education data "College" includes only two year and four-year institutions offering an associate or higher degree Only first-time freshmen who graduated from high school within the previous 12 months are included

SOURCES Regular high school graduates 1988 *Public Elementary and Secondary State Aggregate Nonfiscal Data by State*, National Center for Education Statistics, January 1990 Fall, 1988, unpublished data, IPEDS, NCES, 1990

SREB states are enrolled in college compared to a national rate of 26 percent.

- SREB estimates that about 50 percent of high school graduates in the region enroll in an institution of higher education within 12 months after graduating from high school—the rate for the nation is about 53 percent (see Figure 6).

Another gap in educational attainment among citizens of different races is in college graduation rates. Of the 1980 high school seniors who enrolled full-time at a four-year college or university directly after high school, about 46 percent completed a bachelor's degree within six years; another 9 percent were still enrolled in college.

Completion rates for blacks and Hispanics were about half of that for whites and Asian Americans.

Studies in three SREB states show that of the 1982 first-time, full-time freshmen:

- Almost 54 percent of the white students in the University of North Carolina System had graduated from the institution they originally attended within six years of entry. Of the black freshmen, only about 34 percent graduated.
- At public universities in Tennessee, 40 percent of the white students had graduated from the institution they originally entered within six years, compared to 23 percent of the black freshmen.
- At Maryland's public four-year institutions, about 51 percent of the white freshmen and 28 percent of black freshmen had graduated from, or were still enrolled at, the same institution after six years.

Increase the completion rate in two-year associate degree programs and the percentage of two-year college students who go on to attend senior institutions.

The National Longitudinal Study and Postsecondary Education Transcript Study, which followed a national sample of 1972 high school seniors through 1986, showed that:

- One of three of these students who attended vocational or technical schools eventually received an associate degree, license, or certificate.
- One of five of these students who attended two-year colleges eventually received an associate degree.
- One of five of these students who attended two-year colleges eventually attended a four-year college.
- One of ten of these students who attended two-year colleges transferred to a four-year college and earned a bachelor's degree.

Transfer policies between two-year and four-year colleges vary among SREB states. Two states (Florida and Texas) have legislatively mandated policies that govern transfer practices among institutions of higher education. State higher education boards in Georgia, Maryland, Mississippi, Oklahoma, South Carolina, Virginia, and West Virginia have established statewide policies governing transfer agreements between two-year and four-year colleges. The other six SREB states encourage the development of voluntary agreements between institutions.

Florida has the most comprehensive formal set of transfer processes among the SREB states—a common course numbering system, common transcript format, common calendar, transfer student counseling manuals, and staff assigned to help make the process work at both two-year and four-year institutions. The two-year institutions receive annual reports on the success rates of transfers.

North Carolina is an example of a state with less formal statewide transfer agreements. The North Carolina Association of Colleges and Universities sponsors the Joint Committee on College Transfer Students, which is concerned with aspects of articulation and transfer of students between the state's junior, community, and technical colleges and the senior colleges and universities. The Committee is comprised of representatives from the State Board of Community Colleges, the University of North Carolina System, and the Association of Independent Colleges and Universities. The Committee publishes recommendations on transferability of credit, distribution requirements of a general education program, and essential items to be included on transcripts. Specific institution-to-institution agreements can be developed within the guidelines established by the Committee.

The North Carolina model represents a case where guidelines are prepared for voluntary use by colleges and universities. At the other end of the scale are the more formalized, mandated policies and processes in place in Florida. While neither the North Carolina nor the Florida model may fit exactly the needs of any other state, individual components of the two models are found in all SREB states.

Set quantitative and qualitative targets for graduate enrollments, with consideration of the proportion of minorities and women enrolled, and create conditions for growth in selected fields.

Serious shortages of college faculty, scientists, and other professionals are expected between now and the year 2000. Changes in industry and business will create new jobs requiring scientists, mathematicians, and engineers. If current trends continue, the supply of graduate-educated scientists and engineers will not meet demand. According to SREB's *Investing in the Future*, the National Science Foundation has projected a shortfall of 8,500 graduate-educated scientists, computer scientists, mathematicians, and engineers by the year 2006. A national study projects faculty shortages of about 5,500 in the humanities and social sciences by the turn of the century.

Of the more than 184,000 doctoral students in the nation's universities in 1988, less than 6 percent were Hispanic. Forty-five percent were women. In the nation, 805 doctoral degrees were earned by blacks in 1988—3.5 percent of the total awarded. Almost 1,100 fewer Ph.D.s were awarded to U.S. citizens in 1988 than in 1980.

The Florida Endowment Fund program begun in 1984 awards 25 doctoral fellowships per year to minority students. Designed to expand the pool of black Ph.D.s and faculty, the program may produce in the 1990s the most impressive gains in the nation in the number of black doctoral degree earners, especially those in physical sciences and engineering. Of the total 142 fellowships awarded since the program's inception, 113 students are currently enrolled in doctoral programs; 11 are expected to have completed degrees by fall 1990. If the degrees-earned rates meet expectations and the retention levels are maintained, it is possible that the 1990s could see as many as 20 minority students completing Ph.D. degrees per year in the Florida program.

The Florida Endowment Fund program established by the Florida legislature and the McKnight Foundation may offer important guidance to other states that have developed, or are developing, plans to produce more minority graduate students and doctoral degree earners. It may, in fact, be a model that states or groups of states can adapt and replicate.

States need to target efforts to attract students into fields of study where critical shortages are likely to occur (such as mathematics, science, and engineering) and to attract more women and minority students into these fields. Graduate degree holders emerge from the end of a pipeline that begins in the earliest grades in school. Producing greater numbers of persons with graduate degrees requires that more students in more schools are provided the best instruction in science and mathematics.

BY THE YEAR 2000—

The quality and effectiveness of all colleges and universities will be regularly assessed, with particular emphasis on the performance of undergraduate students.

Actions related to assessment of institutional effectiveness have been taken by legislatures in Arkansas, Florida, Maryland, North Carolina, South Carolina, Tennessee, Texas, and Virginia.

Coordinating or governing boards in Alabama, Georgia, Louisiana, and Mississippi also have taken formal steps to improve institutional assessment. The Alabama Commission on Higher Education requires each institution to implement an assessment program. The University System of Georgia has a strategic planning project that incorporates program evaluation and other assessment activities. Louisiana's Board of Regents includes recommendations and guidelines regarding assessment in its most recent master plan. Mississippi's Board of Trustees of State Institutions of Higher Learning adopted objectives to improve undergraduate education and procedures to monitor progress have been implemented.

SREB states use one of three basic approaches to institutional assessment:

- Statewide policies that are results of legislation or governing board actions that specify a common measure or measures to be used by all institutions.
- Statewide policies that do not require or specify common measures for all institutions, but which provide guidelines to the institutions and outline the kinds of data needed by the state higher education board.
- Each institution develops its own plan for assessing institutional effectiveness and submits results to the state higher education board.

These assessments use a variety of measures to determine institutional effectiveness including:

- Statewide testing programs to assess students prior to their entry into upper-division courses.
- Reviews at the state level to assess productivity of degree programs and the need for programs
- Guidelines for developing institutional assessment plans that are reviewed at the state level by the state higher education board.
- Assessment of entering students to place them in regular or remedial/developmental programs, using the same assessment at all institutions or permitting each institution to use its own assessment.
- Monitoring student retention and graduation rates.
- Results of student performance on entrance examinations to graduate or professional schools and on certification examinations (CPA, nursing boards, etc.).
- Surveys of graduates to determine job placement rates and graduate and professional school acceptance rates.

"Institutional effectiveness" is a criteria for accreditation by the Commission on Colleges of the Southern Association of Colleges and Schools. Individual institutions of higher education are required to develop more specific statements of purpose and educational goals, and evaluate progress toward meeting goals. The statewide assessments in most SREB states appear to require that institutions provide the state higher education boards with the same sorts of information required by the Southern Association, but on a much more frequent cycle and, in some cases, in more detail than the accreditation self-studies conducted every 10 years.

Insist that each institution evaluate the effectiveness of its core curriculum in providing a sound general education for students during the first two years of college.

Florida, Georgia, and Tennessee have implemented statewide testing programs for undergraduates at the sophomore level or higher.

Students in Florida must pass the College Level Academic Skills Test (CLAST) to be eligible to take upper division (junior and senior) courses at Florida's public universities. Georgia requires all students in the university system to pass the Regents' examinations in writing and reading before graduating. The results on the exams in Georgia and Florida also are used for curriculum evaluation. Tennessee requires all seniors at public institutions to take the ACT COMP tests. Evaluation of the general education core curriculum in Arkansas has been mandated. It is anticipated that a uniform test will be used for the evaluation. Recent legislation in Mississippi calls for a "rising junior" test to be designed cooperatively by the Mississippi College Board and State Board for Community and Junior Colleges.

In other states, criteria used for measuring student achievement in general education are left to the discretion of individual institutions.

There is currently much discussion about the criteria for assessing institutional effectiveness. It will be important for state leaders to review the outcomes of these discussions.

Require institutional goals and standards for the proportion of students successfully passing state and national examinations for licensure and certification.

SREB states do not now generally require goals and standards for student performance on state and national licensure examinations, but they are beginning to acquire more information about results on these examinations. Most often, information on students passing these examinations is considered by state higher education boards in the program review and approval process. South Carolina's Higher Education Commission, for example, requests all institutions to submit data and interpretive information on licensing and certification examinations as part of the annual institutional planning and effectiveness reports. Florida and Tennessee use the results as one performance indicator in their statewide institutional assessment programs. Mississippi's 1990 legislation requires its College Board to compare performance of the state's university graduates on licensure and certification examinations with graduates of other states.

Establish standards for students to successfully complete remedial/developmental courses; all institutions will adopt these standards or more rigorous ones.

Arkansas, Georgia, Florida, Tennessee, and Texas have statewide testing programs to assess basic skills of entering college freshmen and place those scoring below statewide minimums into remedial courses. In other states, placement into remedial courses is determined by the individual institution.

Of the five states, only Florida and Tennessee have established statewide policies for successful completion of remedial/developmental programs. In most states, individual institutions determine the policy for successfully completing these programs, typically defined as passing a particular course or sequence of courses. Some institutions also administer exit examinations in their remedial/developmental programs to assess student "readiness" to enter college-level courses.

Insist that every institution or system of institutions establish graduation and retention goals—with special attention to minority and disadvantaged students

As noted, about 46 percent of the nation's full-time students who entered a four-year college or university directly after high school had completed a bachelor's degree within six years. Graduation rates for blacks and Hispanics are about one-half those of whites.

Most SREB states have comparable retention and graduation data from public institutions and can compare enrollment and degree completion rates for different ethnic groups of men and women.

Few states—or individual institutions—have set graduation goals. The Arkansas Higher Education Plan includes an objective to increase the percentage of all students who eventually earn a degree by 20 percent and to increase the percentage of minority students graduating to that of non-minority students. The University of North Carolina Board of Governors has been asked by the legislature to report on reasons for differences in

graduation and retention rates among the institutions in the system.

Establish indicators and achievement targets for graduate programs and state investments in research and development.

As noted earlier, no SREB state appears to have selected indicators or set targets for graduate enrollments, in spite of projections of serious future shortages of persons with graduate degrees. A university's capacity to conduct high quality research is based on its ability to attract research and development funding. This capacity, in turn, affects a state's potential to attract and create businesses and industries, especially high technology ones. Institutional funds and state and local appropriations provide the basic support enabling universities to apply for federal research and development funds, which usually are awarded on a competitive basis. Nationally, about 61 percent of total spending for research and development by doctorate-granting universities comes from federal sources, compared with only about 56 percent in the SREB states (see Table 11). Since a major portion of the nation's total research and development support comes from federal sources, the ability to attract these funds is extremely important. Also, industry investments in research and development tend to flow to institutions with a well-developed research capacity.

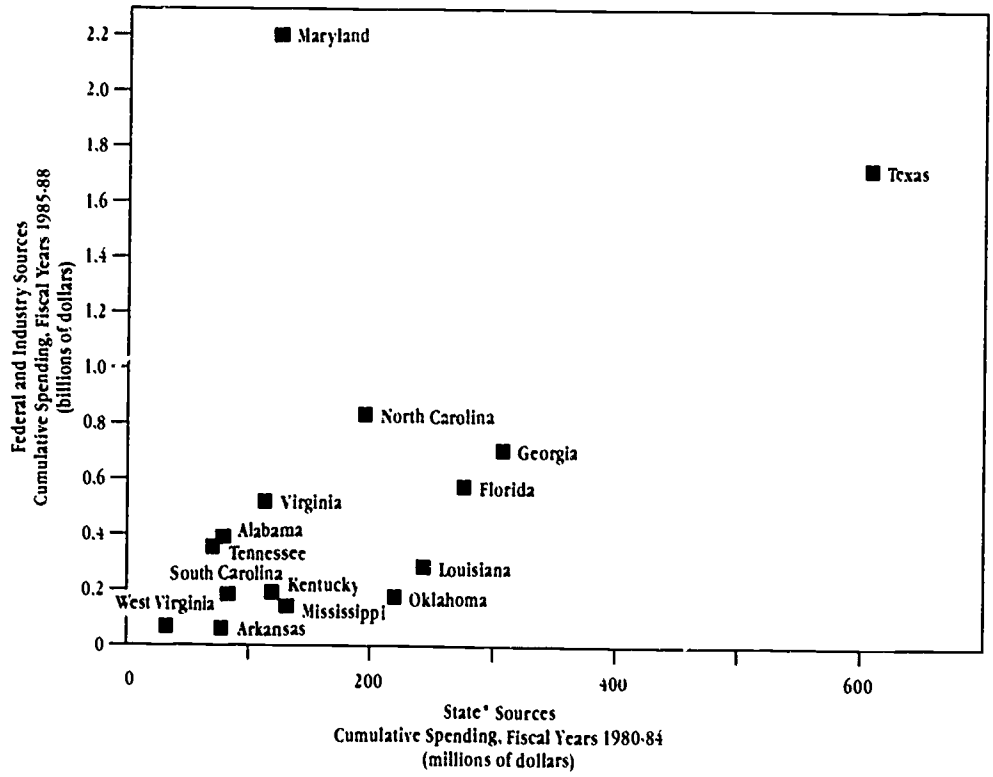
State investments in university research and development programs appear to pay off in attracting larger federal and industry funding. SREB conducted an analysis of state investments (a combination of state, local, and institutional dollars) in research at doctorate-granting institutions. State spending over the period from 1980 to 1984 is closely related to federal and industry spending at the institutions in the following years (1985

Table 11
RESEARCH AND DEVELOPMENT EXPENDITURES BY DOCTORATE-GRANTING UNIVERSITIES, FISCAL 1988

	Total Spending (000s)	Percent of Funds by Source			
		Federal	Industry	State*	Other
United States	$13,243,145	61%	7%	26%	7%
SREB States	3,877,208	56	7	31	6
Alabama	181,737	57	7	30	6
Arkansas	37,955	37	10	45	8
Florida	273,105	55	7	32	6
Georgia	354,578	51	10	38	3
Kentucky	91,948	36	5	53	6
Louisiana	165,623	37	5	51	8
Maryland	783,844	79	4	15	3
Mississippi	63,647	40	8	43	9
North Carolina	372,149	62	10	25	4
Oklahoma	113,931	28	7	59	7
South Carolina	102,160	39	9	48	4
Tennessee	183,756	52	8	34	6
Texas	887,470	51	6	30	13
Virginia	234,887	55	8	32	5
West Virginia	30,418	52	3	40	5

* Includes funding from state and local governments and universities themselves
May not total 100% due to rounding
SOURCE National Science Foundation

Figure 7
SPENDING FOR RESEARCH AND DEVELOPMENT AT DOCTORATE-GRANTING INSTITUTIONS IN SREB STATES
STATE* SOURCES, 1980-84 COMPARED TO FEDERAL AND INDUSTRY SOURCES, 1985-88



*State spending from state government, local government, and institutional sources
Maryland's figure includes the billion dollar federally funded Applied Physics Laboratory at Johns Hopkins University
SOURCE: National Science Foundation

through 1988) (see Figure 7). States that put more dollars into research generally received more federal and industry dollars for research.

In general, states have not yet established indicators and targets for graduate programs and investments in research and development. The majority of non-federal research and development spending comes from the institutions themselves. Non-federal research and development spending from institutional sources was above the national average in six states—Florida, Georgia, Kentucky, Oklahoma, South Carolina, and West Virginia.

Twelve SREB states exceed the national average in their commitment of funds from state and local sources. But, the SREB region is below the national average in the percentage of non-federal research and development funds which universities receive from industry. The percentage of university research and development funds from industry exceeds the national average only in Georgia, Maryland, North Carolina, and Virginia.

BY THE YEAR 2000—

All institutions that prepare teachers will have effective teacher education programs that place primary emphasis on the knowledge and performance of graduates.

Adopt as state policy a continuing state-level emphasis on improving teacher preparation programs that includes college and university presidents and the education and arts and sciences faculty of all colleges and universities in periodic examination of teacher preparation programs.

The 1990s should be a time for continuing an emphasis on teachers who are well-grounded in the liberal arts, who have a depth of study in a discipline, and who share a core of knowledge about teaching based on the best research on teaching

Principals and teachers are making more decisions and are being held more accountable for results. Colleges and universities need to re-think their roles in helping beginning and veteran teachers take on changing roles with decisions about what and how students are taught. Joint school-college efforts will help higher education and the schools clarify their respective roles in preparing teachers initially; in the continuing education of teachers; and how such programs can be strengthened.

Substantive changes in preparing teachers take time. Several SREB states now have state policies aimed at seeking commitment by presidents and other top campus administrators to involve both arts and sciences and education faculty in these changes. Such statewide changes are underway in North Carolina, Tennessee, Texas, and Virginia.

Institute teacher licensure and program approval standards based primarily on knowledge and performance of graduates.

Maintain or exceed the national average in the proportion of teachers qualifying for certification compared to the number who apply when national board certification is established.

Improve the performance of beginning and veteran teachers according to assessments by principals and veteran teachers.

Knowledge and performance—what teachers know, whether they are effective in the classroom, and whether students are successful—should be the guiding principles for licensing and certifying teachers and for approving programs that prepare teachers. All SREB states except Alabama have teacher certification tests for knowledge, and 13 SREB states require on-the-job assessment for beginning teachers before regular licensure.

A study by 12 SREB states (Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, Tennessee, Texas, Virginia, and West Virginia) comparing on-the-job evaluations of teachers provides information on the comparability of these different assessments and suggestions that will help states refine their systems. In another joint venture, 15 states are working in an SREB consortium with Educational Testing Service to develop and share teacher certification tests, especially in areas where it would be costly for a single state to develop and administer tests. States in this project have agreed without difficulty on common objectives to be tested for licensing teachers.

Outcome measures, such as passing rates on teacher licensure tests and classroom performance, are being used increasingly by SREB states as part of state program approval. SREB states either are requiring accreditation by the National Council for Accreditation of Teacher Education (NCATE) or are combining that review with state approval processes. NCATE standards now place more emphasis on assessment of performance of prospective teachers as they move through the college program and into the classroom.

Reduce by one-half the percentage of graduates not meeting initial teacher licensure standards.

Passing rates on teacher licensure tests (measures of knowledge) as well as overall performance (measured by on-the-job assessments), and the newer assessments being designed for national certification and accountability at school level increasingly will tell more about effectiveness and preparation of teachers. Results of entrance examinations for teacher education programs and initial licensure show that many persons do not meet the standards. States need better information on how many graduates meet teacher licensure requirements. Few have set goals for raising the passing rate, especially for minorities.

Increase threefold the number of minorities graduating from programs to prepare teachers—this means an annual increase of approximately 20 percent each year to the year 2000.

Just over 10 percent of all public school teachers are minorities. Two-thirds of the SREB states have student minority enrollments above 25 percent. In the past three years, not a single SREB state has increased its percentage of minority teachers (see Table 12). The same is probably true for all other states in the nation. Only 10 percent of the new teaching certificates in the SREB states are being awarded to minorities.

Table 12
MINORITY ENROLLMENT AND TEACHERS, SREB STATES

	Minority Students as Percent of K-12 Enrollment		Percent of Minority Teachers	
	1986-87	1988-89	1986-87	1988-89
Alabama	38%	37%	25%	24%[1]
Arkansas	25	25	NA	14
Florida	35	36	20	20
Georgia	39	NA	NA	NA
Kentucky	11	10	4	4
Louisiana	43	46	32	31
Maryland	40	38	23	22
Mississippi	56	51	35	34
North Carolina	32	33	19	19
Oklahoma	23	25	7	7
South Carolina	45	42	22	21
Tennessee	23	23	10	10[2]
Texas	49	49	22	22
Virginia	27	NA	19	18
West Virginia	4	NA	NA	NA

[1] 1987-88 data is the latest information available
[2] The race and sex of 13% of Tennessee public school teachers were not reported for 1987 or 1989
NOTE: Minority students include American Indian, Alaskan native, Asian, Pacific Islander, Hispanic, and black (non Hispanic)
SOURCES: State departments of education, SREB survey, March 1990, U.S. Department of Education

States have targeted funds to increase the number of minority teachers through efforts in middle schools and high schools to: prepare more minority students for college; interest high school students in teaching through programs, such as the Teacher Cadet Program in South Carolina; and provide scholarships for teacher education students. The Texas Alternative Certification Program has been successful in attracting minorities into the classroom. At the end of 1989, 50 percent of the new interns in the Texas program were minorities.

Table 13
STATE-FUNDED FINANCIAL INCENTIVES FOR UNDERGRADUATE TEACHER EDUCATION STUDENTS SREB STATES, 1990

	Year Initiated	Name of Program	Total 1989-90 Funding	Maximum Amount of Award Per Year	Number of Awards 1989-90
Alabama	1984	Emergency Secondary Education Scholarship Program	$977,597	$2,000	312
Arkansas	1983	Emergency Secondary Education Loan	$70,000	$2,500	21
Florida	1986	Chappie James Most Promising Teacher Scholarship	$2,676,000	$4,000	709[1]
	1983	Critical Teacher Shortage Scholarship Loan Program	$2,578,323	$4,000	657[1]
	1987	Challenger Astronauts Memorial Undergraduate Scholarship Program	$20,000	$1,000/$4,000	20[1]
Georgia	1984	State Direct Student Loan	$575,000	$2,625/$4,000	228
	1987	Charles McDaniel Teacher Scholarship	$3,000	$1,000	3
Kentucky	1986	Teacher Scholarship Program	$1,000,000	$5,000	225
	1982	Math/Science Incentive Loan Program	$452,100	$2,000	212
Louisiana	1986	Education Majors Scholarship Program	$2,000,000	$2,000	1,704
Maryland	1984	Sharon Christa McAuliffe Memorial Teacher Education Tuition Assistance Program	$210,000	$2,500/$6,500	65
Mississippi	1988	William F. Winter Teacher Scholarship Loan Program	$120,000	$4,000	30
North Carolina	1986	North Carolina Teaching Fellows Program	$95,000	$5,000	400
	1957	Prospective Teacher Scholarship/Loan Program	$1,600,000	$2,000	800
Oklahoma	1984	Future Teachers Scholarship Program	$180,000	$1,500	160
South Carolina	1984	South Carolina Teacher Loan Program	$3,300,000	$2,625/$4,000	971
Tennessee	1989	Minority Teaching Fellows Program	$95,000	$5,000	19
	1984	Teacher Loan Scholarship Program	$330,000	$1,500/$2,250	250
	1988	Teacher Loan Program for Disadvantaged Areas	$30,000	$1,500	20
	1990	Community College Fellowship Program	$50,000	$2,000	25[2]
Virginia	1984	Virginia Teaching Scholarship/Loan Program	$600,000	$1,000/$2,000	350
West Virginia	1988	Underwood-Smith Teacher Scholarship Program	$400,000	$5,000	100

[1] Includes initial and renewal awards
[2] Scholarships will be awarded 1990-91 academic year
NOTE: In Texas individual institutions of higher education offer teacher education scholarships
SOURCE: State departments of education, SREB survey, March 1990

Evaluate different approaches to prepare teachers, such as alternative certification, four-year undergraduate, and extended programs, based primarily on performance of graduates and of their students.

SREB has suggested a variety of approaches to preparing teachers. States should place emphasis on recruitment and preparation of knowledgeable persons who have a strong academic background—one that will enable them to make informed decisions about curriculum and instruction. Alternative certification programs that attract both arts and sciences graduates and persons making career changes should be a part of every state's effort. Several SREB states have enacted policies to attract teachers in shortage areas through loan/scholarship programs (see Table 13).

To know what really works will take much more monitoring and close scrutiny of results. Too little has been done to evaluate the long-term effects of alternative certification, loan/scholarship programs, beginning teacher programs, recruitment efforts, and programs and scholarships for minorities.

BY THE YEAR 2000—

All states and localities will have schools with improved performance and productivity demonstrated by results.

Establish school standards and rewards based primarily on school outcomes, such as student achievement, attendance, and assessments of students' readiness for post-secondary education and employment.

Focus on school site results and rewarding schools for outcomes.

Most states have in place, or are developing, accreditation standards and incentive programs to reward schools that meet outcomes standards in student achievement, student attendance, or dropout reduction. Some states have developed sanctions for school districts that do not meet required levels of student achievement or performance.

More state accreditation standards for schools are focusing on the results or outcomes of education. Alabama, Kentucky, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Texas, and Virginia use or plan to use, student achievement tests scores along with other measures to determine if schools are meeting statewide standards.

Standards in North Carolina's new accreditation system include: 80 percent of high school students earning at least 5 units toward graduation during the school year; 35 percent of the graduating students completing courses required for entry into the University of North Carolina system; and dropouts decreasing by 10 percent a year.

The Task Force for Alabama School Systems developed 62 performance-based standards. Thirteen standards address student performance, the remaining forty-nine focus on system and school accountability and indicators of conditions that promote student achievement and success.

Virginia's Educational Performance Recognition Program will report outcome data by district and school, and provide comparisons among school districts with similar characteristics. The school accreditation process will emphasize improvement in educational practices and student learning, but allow local flexibility in programs to meet the standards. The outcome indicators project will also be used for an incentive and recognition program based on performance and progress.

In Maryland, an accreditation system is being implemented that uses information from parents and students, the school's teachers and administrators, and a review by educators from other systems. Incentives and sanctions for schools and districts will be based on performance.

Kentucky, Mississippi, South Carolina, and North Carolina have passed legislation allowing flexibility in school standards in exchange for results such as demonstrating progress in student achievement and reduction of dropout rates.

Alabama, Arkansas, Florida, Louisiana, North Carolina, Oklahoma, South Carolina, and Virginia now issue or plan to issue annual "report cards" to the public that focus on the results of education. Typical examples of results to be included are: student performance on state and/or national achievement measures, dropout and school graduation/completion rates, student attendance, college-going rates, percent of students retained in grades, and passing rates on Advanced Placement examinations.

Current "report cards" often group schools according to common characteristics (school size and socioeconomic status of students, for example) enabling schools to compare results to peer schools as well as to state averages. In addition, comparisons of the performance of schools and school districts can be made over time.

In Florida and South Carolina incentive programs have been underway for several years that provide money (either to a school or to school personnel) based on school outcomes and performance of students. School incentive programs in Florida, Louisiana, and Texas provide money to schools that show improved student achievement and performance. Incentive programs for rewarding excellence and improvement in schools were passed in 1990 by Mississippi and Kentucky legislatures.

South Carolina's School Incentive Program rewards schools that improve in such areas as student achievement and teacher and student attendance. A school site council comprised of the principal, teachers, and parents allocates the funds. Schools that receive incentive awards are eligible to ask for flexibility in state rules and regulations.

Florida has two programs—the District Quality Instruction Incentive Program (created in 1984) and the High School Accountability Program (created in 1989). The High School Accountability Program awards grants of $10,000 to $75,000 to high schools, based on their size and the number of performance indicators that are met. The funds are to be used by the school "to improve productivity, including improvement of student outcomes." The School Incentive Program being developed in Louisiana will identify at least 100 schools that have made significant progress, based on such factors as test results, dropout rates, and graduation rates. The cash awards will be based on annual profiles of every school and school system.

The Texas Educational Excellence Program (funded at $10 million over two years) rewards gains made in the achievement of schools and school districts and encourages innovative education programs.

Prepare school board members, superintendents, principals, and teachers to establish goals and operate results-oriented accountability systems.

Support programs in all districts that help principals and teachers increase involvement of parents and the community in each school.

Increase by 100 percent school-business partnerships.

SREB states offer a variety of state-funded workshops for principals, superintendents, and teachers that incorporate topics on goal-setting and evaluation. It appears that statewide efforts to provide preparation for developing goals and evaluating results are being directed more to school administrators than to teachers. All SREB states except Kentucky and Maryland reported providing some degree of statewide training for superintendents and principals to develop goals, focus on results, and implement new programs. Only nine states (Alabama, Arkansas, Florida, Louisiana, South Carolina, Tennessee, Texas, Virginia, and West Virginia) reported having statewide programs for teachers. Programs include technical assistance to districts and schools, state-sponsored and -funded leadership seminars, statewide conferences for principals and key instructional staff, and programs offered by regional education centers and management development networks.

State-supported activities for school board members are provided in all SREB states except Louisiana and North Carolina. Most are one-day programs developed in cooperation with the state association of school boards. The Florida Department of Education and the Florida School Boards Association are developing jointly a program for school boards. The proposed program will provide awards and certificates to board members based upon completion of specified curricula.

NCNB Corporation, the South's largest banking organization, has made a $2 million gift to establish The SREB Leadership Academy and NCNB Leadership Awards Program illustrating the commitment and interest of the business community in reaching educational goals. The Leadership Academy will provide intensive preparation linked directly to the school workplace for educational leaders committed to setting specific, measurable goals for education and working to achieve them. The NCNB Leadership Awards Program will provide sizable grants to schools and school systems that work to implement performance-based plans to get results.

A survey of public elementary and secondary schools conducted by the National Center for Education Statistics indicated that the number of business-education partnerships more than tripled from 1983 to 1988. It is estimated that there were more than 39,000 business-education partnerships in the region in 1988. The challenge to business and education leaders in the 1990s is to establish partnerships that deal with key educational issues and that apply business expertise and long-term support to making a difference on important issues. Many of the business-education partnerships of the 1980s provided "extras"--not

enough tackled fundamental problems that education cannot solve alone.

Programs in Arkansas, Kentucky, Louisiana, Mississippi, and Tennessee promote parent and community involvement in schools through "Parents as Teachers" programs, district meetings held in the community, and parent seminars. One good illustration is the recently instituted program in Tennessee to fund activities joining families, community leaders, and businesses in partnerships with classroom teachers and administrators. Activities include technical assistance and incentive grants for parenting skills programs, continued funding for nine family and community involvement projects being developed as models, formation of a network of regional community involvement coordinators, and several conferences to share what is being learned. A new Governor's Award for Community Commitment for Excellence in Education also is part of the program and recognizes schools with outstanding community involvement programs.

BY THE YEAR 2000—

Salaries for teachers and faculty will be competitive in the marketplace, will reach important benchmarks, and will be linked to performance measures and standards.

Faculty and teacher salaries are important indicators of a state's commitment to improving education. But as SREB has noted, "...increasing salaries for teachers and faculty is a 'big ticket' budget item for states and localities." For example, the estimated cost of only a five percent increase in teacher salaries ranges from nearly $25 million in West Virginia to over $275 million in Texas and totals over one billion new dollars for the region. Benefits typically add about 20 percent to salary costs.

Salary increases for teachers and faculty should not be based on what is left after mandated spending for prisons, highways, health and other programs. SREB states need more systematic and rational ways of setting goals for adequate compensation of educators. And afterward, states need to determine if and when the money made a difference in the performance of schools, colleges, and students.

Table 14
ESTIMATED AVERAGE TEACHER AND FACULTY SALARIES SREB STATES, 1989-90

	Estimated Average Teacher Salary	Estimated Average Full-Time Faculty Salary in Public Four-Year Colleges
United States	$31,304	$42,518
SREB States	27,338	40,018
Alabama	25,187	36,018
Arkansas	22,009	34,150
Florida	28,592	44,652
Georgia	28,027	40,447
Kentucky	26,275	37,077
Louisiana	22,993	33,015
Maryland	36,092	44,384
Mississippi	24,363	35,008
North Carolina	27,814	41,535
Oklahoma	23,070	36,224
South Carolina	27,076	38,688
Tennessee	27,052	38,935
Texas	27,502	41,756
Virginia	30,926	46,941
West Virginia	22,842	32,389

SOURCES: National Education Association, "Average Salaries of Teachers Up, Dollar Gap Among States Widens," Press Release April 30, 1990; State Departments of Education, SREB survey, March 1990; SREB Data Exchange

Agree at the state level on appropriate salary goals for teachers and faculty and on a schedule for meeting these goals.

Faculty salaries at colleges and universities in SREB states average about 94 percent of the national salary average. There is considerable variation among the states, from 76 percent to 110 percent of the national average. Since competition for faculty is at least regional, and more often national, the litmus test regarding faculty salaries is whether an institution can attract and retain good faculty. Few states appear to systematically assess whether compensation is adequate by this measure. They rely primarily on comparisons of salary averages and occasional anecdotal reports about the loss of outstanding faculty. Regional, national, and peer group salary averages are relied on most, since more detailed reviews of faculty turnover and and hiring decisions are not systematically conducted.

Florida, Maryland, and Virginia have made notable progress, all having faculty salary averages above the national average in 1989-90 (see Table 14). But few states have set clear goals or adopted schedules for meeting new levels of faculty salaries during the 1990s.

Between 1979 and 1989, some SREB states made progress in closing the gap between regional and national average salaries for teachers (see Table 14). But SREB estimates that overall the regional average teacher salary has slipped from 88.2 percent of the national figure in 1988-89 to 87.3 percent in 1989-90. By comparison, the 1979 SREB figure was 87.6 percent of the national average.

Average teacher salaries in 13 SREB states rank in the bottom half of states nationally. Maryland and Virginia are the only SREB states where average teacher salaries are near, or exceed, the national average.

Several SREB states have established minimum salaries for beginning teachers and/or a statewide salary schedule. Most SREB states have some type of state salary schedule that guides school districts in setting teacher salaries. Ten states (Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and West Virginia) have state-adopted minimum salary schedules. The minimum salary in 1989-90 ranges from $13,525 in Louisiana to $19,140 in North Carolina.

Provide pay plans for teachers and faculty that reward outstanding performance, expanded responsibilities, or expertise in critical areas (for example, allocation of a set percentage of salary funds for this purpose).

Increase numbers of teachers and faculty with higher performance evaluations who choose to remain in the classroom.

Several SREB states provide additional pay through career ladder or incentive programs for teachers who do a better job or take on extra duties. North Carolina's pilot Career Development Program, funded at $46.5 million, supplies supplemental pay to participating teachers in 16 districts. South Carolina's Teacher Incentive Program raised the state's average teacher salary by $438 last year. Tennessee's Career Ladder Program provided salary supplements ranging from $1,000 to $7,000. Teachers who take part in the Texas Career Ladder Program receive supplements of $2,000 to $4,000.

Career Ladder and other pay for performance programs are designed to increase the numbers of teachers with hign performance evaluations who choose to remain in the classroom. These incentive programs are relatively new. No state has yet completed studies to determine if they are keeping more high quality teachers in the classroom.

Merit evaluations and peer judgments play a major role in determining promotions and salary increases for collegiate faculty. In most SREB states, lump sums are appropriated for faculty salaries; institutions determine how the increases are distributed to individual faculty. Not uncommonly, the state may issue guidelines with respect to minimum and maximum increases that can be given.

Establish a system to inform the governor, legislators, and citizens about the present and projected supply and demand for teachers and faculty and the progress made in achieving compensation goals for them.

Supply and demand projections can assist states in developing and monitoring effects of programs to increase teacher and faculty compensation. Maryland, for example, projects teacher supply and demand for two years in subject areas and geographic areas where critical shortages exist or are foreseen. Projections of teacher education graduates, including information on the number of minority graduates, also is included. Louisiana annually monitors current and future teacher supply and demand. Kentucky and Tennessee are planning to assess supply and demand.

A significant portion of new graduates in teaching tend to have job offers in various states in the region. There is merit in a regional approach to developing systems for producing supply and demand projections of teachers. Such a system also could monitor the effects that changes in state levels of compensation have on modifying supply/demand relationships—a difficult task for an individual state.

Conduct periodic reviews of the areas of expertise, gender, and race of persons who are attracted to teacher education programs, who graduate, and who are employed as beginning teachers (such reviews should help guide policies about adequate compensation).

In the late 1980s, states and institutions have focused on increasing both the quality and number of prospective teachers. New scholarship

programs have been developed to attract better academically qualified high school students into teaching. Admissions standards for teacher education programs now require higher grade-point averages and testing of general knowledge acquired in the first two years of college.

But, higher education coordinating agencies and state departments of education need to establish systems now for collecting and analyzing information on prospective teachers and for following them through their college experience and early years of their careers

Regular reviews of the characteristics of students who are accepted into and complete teacher education programs can help states evaluate initiatives to increase the number and quality of teachers. This could also generate better information on the future supply of teachers. Analyses also need to follow the new teacher into the job. States need to know if their efforts are keeping the best of the new teachers in the profession and if their presence is related to improved performance of students.

BY THE YEAR 2000—

States will maintain or increase the proportion of state tax dollars for schools and colleges while emphasizing funding aimed at raising quality and productivity.

SREB's *Funding Schools and Colleges to Reach Educational Goals* noted that:

- For all SREB states, federal funds make up a smaller part of school budgets now than at the beginning of the 1980s. In most SREB states, schools depend more on state funds now than in 1980 (see Table 15).
- In a majority of SREB states, state appropriations account for nearly one-half of higher education funds, but the share of higher education's budget coming from state funds declined in the 1980s.
- Every SREB state appears to be spending a smaller share of its budget for higher education (see Table 16).

The establishment of goals for improving education is a compelling argument for educational funding. But the message from state budget actions of the 1980s is that it may take programs aimed at solving special problems and capitalizing on opportunities, and more of them, to significantly increase the proportion of state tax dollars going to schools and colleges.

Agree at the state level on funding plans for schools and colleges that emphasize raising quality and productivity (for example, state, campus, and district leaders could earmark a specified budget percentage for special incentive awards for quality improvement).

Evaluate the effectiveness of selected school and collegiate programs and link the results to funding decisions.

Establish a state competitive grant process that assigns dollars where they will have the biggest impact on promoting specific initiatives (for example, university basic and applied research, effective school remediation programs, and dropout prevention programs).

How much money is spent for education is important, but equally or even more important is how the money is spent. Major new funding for schools and colleges most likely will be funding linked to particular efforts to raise quality and productivity, often in very specific areas. The school and teacher incentive programs discussed earlier are good examples of this targeting of dollars.

Arkansas, Florida, Georgia, Louisiana, Maryland, Oklahoma, South Carolina, Texas, and West Virginia report having competitive grant programs to which schools and school systems apply for special funds. Legislation is pending in

Table 15
SOURCES OF REVENUES FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, FISCAL YEAR 1988

	Percentage Distribution Within the State		
	State Funds	Local Funds	Federal Funds
Alabama	64.4%	22.4%	11.8%
Arkansas	56.3	32.5	11.0
Florida	55.0	38.4	6.7
Georgia	57.1	35.6	7 3
Kentucky	65.2	23.2	11.7
Louisiana	55.3	33.5	11 2
Maryland	38.7	56 3	5.0
Mississippi	65.6	24.5	9.9
North Carolina	66.7	25.7	7.6
Oklahoma	65.8	25.5	6 0
South Carolina	54.4	35.9	8.5
Tennessee	44.5	45.0	10.5
Texas	44.2	47 8	7.8
Virginia	36.9	57 5	5.6
West Virginia	67 3	24.6	8.1

NOTE State percentages may not add to 100 percent due to rounding and to exclusion of funds from intermediate sources (generally special grants which may be from a variety of sources) which accounted for 1 4 percent in Alabama, 0 2 percent in Arkansas, 2 8 percent in Oklahoma, 1 2 percent in South Carolina, and 0 2 percent in Texas

SOURCES U S Department of Education, National Center for Education Statistics, special tabulation from the Common Core of Data, 1987 88, final tabulations, and Virginia Department of Education

Alabama to establish a competitive grant program for schools. Such programs include awards to schools and districts for innovative approaches to improve student performance, programs for gifted and talented students; early intervention activities for "at risk" students; career development for teachers and administrators; and special equipment needs in mathematics and science.

New dollars for higher education in the 1980s were often earmarked for specific purposes—centers of excellence, endowed chairs, targeted research and development, and instructional equipment. Tennessee, for a number of years, has provided a special pool of state dollars, now up to 5 percent of total state funding for higher education, based on an institution's achieving agreed-upon levels of performance.

The Texas Advanced Research and Advanced Technology Programs (funded for 1990-91 biennium at $20 million and $40.5 million, respectively) are intended to assign dollars where they are likely to have the greatest impact on promoting specific research and development priorities.

Impressive as these individual state activities may be, they are still few in number and small compared to the typical state's total investment in education. They exist as scattered bits and pieces, not as well-designed programs within a state's educational structure. The challenge for SREB states is to bring the parts together, each adequately funded, in a coordinated effort to reach performance goals in education.

Provide annual financial statements to governors, legislators, and citizens on the state's success in implementing funding plans for education (statements should include "constant dollar" and percentage measures that communicate clearly).

An annual financial statement on educational funding for education should be a part of every state's budgeting process. SREB's proposed format for an annual "State Report on Funding for Education" (see Figure 8) illustrates what could become a respected statement for focusing pub-

Table 16
STATE APPROPRIATIONS FOR HIGHER EDUCATION AS A PERCENT OF STATE TAXES

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
United States	14.0%	14.1%	14.1%	13.1%	13.2%	13.4%	13.1%	12.9%
SREB States	15.9	16.6	17.0	16.3	15.7	16.0	15.6	14.6
Alabama	19.9	17.2	17.4	15.2	17.2	21.1	17.3	16.9
Arkansas	15.8	14.6	14.8	12.8	14.3	16.4	14.5	13.8
Florida	13.3	14.4	14.6	13.1	12.3	12.4	13.0	11.9
Georgia	14.3	15.2	14.9	14.2	13.5	13.6	13.4	13.1
Kentucky	13.5	13.6	14.1	14.3	13.5	13.5	13.0	13.6
Louisiana	14.2	14.5	16.5	16.0	14.4	14.9	15.7	13.6
Maryland	12.4	12.1	12.5	11.2	11.3	11.4	11.0	10.5
Mississippi	18.7	20.6	19.3	19.9	18.9	19.5	16.8	17.0
North Carolina	19.3	20.0	19.7	18.7	18.5	19.3	18.8	18.5
Oklahoma	12.1	12.0	14.6	14.6	12.3	14.4	14.4	12.3
South Carolina	18.9	18.4	17.1	16.5	16.5	17.3	16.5	15.2
Tennessee	17.3	16.6	16.7	16.1	16.5	16.8	16.9	16.6
Texas	17.9	20.9	22.6	23.2	20.5	19.8	19.1	16.6
Virginia	16.8	16.8	16.6	15.2	16.0	15.9	16.3	14.9
West Virginia	13.4	13.1	13.1	11.6	11.9	12.6	13.2	13.6

SOURCES: Edward R. Hines, *Appropriations of State Tax Funds for Operating Expenses of Higher Education 1980-81* (1980) and *1981-82* (1981) and *1983-84* (1983) and *1984-85* (1984) and *1985-86* (1985) and *1986-87* (1986) and *1987-88* (1987). U.S. Bureau of the Census, *State Government Finances in 1981* (1982) and *1982* (1983) and *1984* (1985) and *1985* (1986) and *1986* (1987) and *1988* (1989).

lic attention on education. Such a report, coupled with a report on the state's success in accomplishing its goals, would serve to demonstrate good stewardship and build the case for future plans and priorities. The emphasis of such a report would be on annual comparisons of funding within the state.

States provide educational finance information to their citizens in a variety of ways—from statements in a governor's annual address at the opening of a legislative session to publishing detailed documents.

States' efforts to provide the public with more timely information about educational funding are to be applauded. However, state financial reports are often complex, involved, frequently voluminous, and mean more to specialists than a general audience. What is called for is a report designed to inform and enlighten the general public and to communicate a bottom line figure in a manner as straightforward as possible.

The key questions are:

- Has our state's overall spending for education increased or decreased compared to last year? In total terms? In per student terms?
- Are we spending a lesser or greater share, or the same share, of our state's tax dollars on education this year than last year?
- What are the important factors if the total or the percentage has changed, or has not changed?

None of the reports received answers these questions in a relatively simple, easy-to-comprehend, general statement.

In the next few years states will need to link educational financing information with data on progress toward achieving state educational goals that have been adopted or are now being considered

Figure 8
STATE REPORT ON FUNDING FOR EDUCATION

An Annual Report to Citizens from the Governor and/or State Legislature

$ _____ Total State General Tax Funds Appropriated (current fiscal year)

$ _____ State General Tax Funds Appropriated for Kindergarten through Grade 12 (current fiscal year)

_____% Percent of State General Tax Funds Appropriated for Kindergarten through Grade 12 (current fiscal year)

$ _____ State General Tax Funds Appropriated for Kindergarten through Grade 12 (upcoming fiscal year)

_____% Percent of State General Tax Funds Appropriated for Kindergarten through Grade 12 (upcoming fiscal year)

_____ Enrollment in Kindergarten through Grade 12 (current year)

_____% Estimated percent change in enrollment, Kindergarten through Grade 12 (upcoming year)

$ _____ State General Tax Funds Appropriated for Postsecondary Education (current fiscal year)

_____% Percent of State General Tax Funds Appropriated for Postsecondary Education (current fiscal year)

$ _____ State General Tax Funds Appropriated for Postsecondary Education (upcoming fiscal year)

_____% Percent of State General Tax Funds Appropriated for Postsecondary Education (upcoming fiscal year)

_____ Enrollment in Postsecondary Education (current year)

_____% Estimated percent change in Enrollment in Postsecondary Education (upcoming year)

Percent of Revenues for Kindergarten through Grade 12 from state, local, and federal sources as reported to the U.S Department of Education for the three most recent years on which information is available.

Year	State	Local	Federal
19____	_____%	_____%	_____%
19____	_____	_____	_____
19____	_____	_____	_____

Percent of Revenues for Postsecondary Education from various sources for the three most recent years on which information is reported to the US Department of Education Tuition and fees, state (and local) appropriations, and government contracts and grants may be among the sources included.

Year	Tuition and Fees	Appropriations		Government Grants and Contracts
		State	Local	
19____	_____%	_____%	_____%	_____%
19____	_____	_____	_____	_____
19____	_____	_____	_____	_____

Funding for Special Initatives

Dollars are increasingly being earmarked in the state budget for special initiatives, many of which are efforts to address long-term problems that require long-term commitments. Sometimes these initiatives seem sporadic or decided on an *ad hoc* basis. The annual financial report to citizens on funding for education should track these initiatives and thereby stress the importance of staying the course on planned, long-term programs.

THE CHALLENGE

During the 1980s, Southern Regional Education Board states led the nation in educational reform In 1990 these states lead the nation in setting specific goals for results they expect from their educational reforms.

SREB's *Educational Benchmarks, 1990* is a first attempt to focus attention and spark questions about where we now stand on important educational goals Reaching goals means determining if our educational programs are on track and if they are being supported adequately SREB's *Benchmarks, 1990* shows that much remains to be done to develop the information needed to measure progress

Many of today's educational information systems were not designed to answer the questions of the 1990s. Our present systems tell us how many first-graders there are, but not how many children are "ready" for the first grade. We don't know how many "at risk" preschool children we have or how many of them are in preschool programs. We know how many twelfth-graders we have, but not how many students drop out of school before graduating. We know that students who complete a "general" curriculum in high school are "generally unprepared" for the workplace or a college classroom, but we know surprisingly little about which courses and curricula high school students actually take We know, for example, that a student who is going to college should have completed Algebra I by grade 10, but we do not know how many students actually have.

States are at different stages in implementing better information systems. Until better information systems are in place, states may have impressive goals, but poor means of knowing if progress is being made. Not all of the actions taken to improve education will work. When performance is measured and alternative actions evaluated, states will save dollars and time.

How can a state know if it has the information systems for gathering and analyzing what is required for measuring progress toward its educational goals? One way to know is to ask these questions—

- Is your state able to follow students from kindergarten through grade 12? Into and through post-secondary education? Into the military or first job?
- Does your state know how many high school students in each grade have completed critical courses or examinations? Can your state organize this information and report regularly on all students by their levels of achievement? Can the information be reported by race/ethnicity? Gender? For students "at-risk"?
- Is your state working with others to develop common definitions of "dropout"? "Vocational completer"? "Graduate"? Is your state participating in the national effort to define and gather comparable state data on school dropouts?
- Is your state planning to participate in the National Assessment of Educational Progress trial state assessment in reading and mathematics in 1992?
- Do the colleges and universities in your state regularly report to schools on how their high school graduates perform in college? Do the colleges and schools work together in using this information to improve school curricula and teaching methods? Is this feedback system evaluated regularly?
- Can the public colleges and universities follow student progress from admission to graduation, including if the student transfers from one state-supported institution to another? Is this information available by gender, race/ethnicity, and by the mix of high school courses taken before college?
- Is the state higher education agency collecting and analyzing information on college student retention and graduation rates? Are common definitions used by the public colleges and universities?

- Are the public postsecondary institutions periodically assessing students at critical points in their collegiate experience? Do these assessments include information that will help to judge institutional effectiveness?
- Do schools and colleges routinely conduct follow-up studies of samples of students who graduate and those who do not to determine what students are doing after they leave the institutions?
- Are the teachers and faculty with high performance evaluations staying in the classrooms of your state as long as other teachers and faculty?
- Does the state produce a clear, concise report to the public each year on education's share of the dollars appropriated by the state and whether that share is increasing, decreasing, or remaining the same?

Most of these questions have to do with the performance of students. States need information to follow students through the educational system and monitor their achievement.

Providing the information that leaders in education and government need to measure progress in meeting educational goals will have a cost. How much new money depends on where a state is now with its information system, where it can make trade-offs, and how it can use new technology to gather and analyze information. There are ways to reduce the costs. Technology and resource sharing among states are two ways.

The hour glass on the 1990s has already been turned. The time available in this century to prepare students for the next one is certain and is limited. Our ability to measure educational progress and establish benchmarks to guide us depends largely on decisions yet to be made.

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