DOCUMENT RESUME

ED 445 588 HE 033 182

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TITLE Reducing Remedial Education: What Progress Are States Making? Educational Benchmarks 2000 Series.
INSTITUTION Southern Regional Education Board, Atlanta, GA.
REPORT NO SREB-00E06
PUB DATE 2000-00-00
NOTE 19p.
AVAILABLE FROM Southern Regional Education Board, 592 10th Street, N.W., Atlanta, GA 30318; Tel: 404-875-9211; Web site: http://www.sreb.org.
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Black Students; College Admission; College Bound Students; Educational Improvement; Educational Policy; *Excellence in Education; High Schools; Higher Education; Hispanic American Students; Organizations (Groups); Placement; Professional Associations; Program Effectiveness; Regional Planning; *Remedial Instruction; Remedial Mathematics; *Remedial Programs; School Policy
IDENTIFIERS Southern Regional Education Board; State Policy

ABSTRACT

This report highlights the steps that colleges and universities in Southern Regional Education Board (SREB) states are taking to reduce the need for remedial college courses, addressing the following issues: who needs remedial education; how many students entering college need remedial courses; whether state policies on college-level assessment and placement matter; who should deliver remedial education; whether taking the right high school courses matters in reducing the need for remedial education; why so many students need remedial mathematics; what states are doing to address the fact that more than half of African American and Hispanic students who begin college need at least one remedial course; how effective remedial education is for college students; and what states should do to reach the goal that four of every five students entering college will be ready to begin college-level work. The report concludes with several recommendations, including states should fit the remediation approach to the student; states should increase the required number of mathematics courses; colleges should encourage students in middle grades to begin planning for college; and colleges and schools need to make better use of information on how high school graduates perform as college freshmen. (SM)

SREB

# Reducing Remedial Education:

## *What Progress are States Making?*



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EDUCATIONAL BENCHMARKS 2000 SERIES

# Goals for Education: Challenge 2000

BY THE YEAR 2000—

*All children will be ready for first grade.*

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

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

*90 percent of adults will have a high school diploma or its equivalent.*

*Four of every five students entering college will be ready to begin college-level work.*

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

*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.*

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

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

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

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

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

The SREB Commission for Educational Quality, 1988

# COLLEGE READINESS

BY THE YEAR 2000—

***Four of every five students entering college will be ready to begin college-level work.***

*"Remedial education in colleges and universities is now needed by about one-third of the students in states that have collegiate placement standards. If states are to increase the access to quality collegiate education, especially for minorities and adult citizens, colleges must offer some remedial education for years to come. But it is reasonable to expect that in future years school improvement efforts and college actions will mean fewer first-time college students will need remedial education."*

*SREB Goals for Education,* 1988

There is no "typical" remedial student. Understanding that there is no typical remedial student is the first important step to having fewer students who need remedial help in college.

Some remedial assistance and courses are essentially unavoidable and are a wise investment. Other remedial assistance is avoidable. State leaders and parents are justifiably angry about paying for remedial programs for problems that could have been avoided.

Understanding who needs additional help and what kind of help they need to be ready to begin college-level work is the key to developing policies and practices that will reduce the need for remedial education.

- The remedial student may be a person who graduated from high school, often years ago, and needs a refresher course in mathematics or writing. Usually these are people in their mid-20s who are coming to a community college to get a new start toward a new job. They have not been using higher-level mathematics or doing much writing, and they need a refresher or remedial course. This you should be willing to support. This is essentially unavoidable in our society as young adults seek careers and is a "cost of doing business" in a society that values freedom and individual choices. Remedial education for these young adults will be with us for the foreseeable future.
- The remedial student may be a recent high school graduate who completed a college-preparatory curriculum. The young person is not necessarily at fault here, and especially not if the student received high passing grades in the college-preparatory courses. The system has failed the student. It is fair and is a wise investment to help students who graduated from high school and thought they were on track for college — only to learn that their high schools had done a poor job of preparing them. State accountability measures are being put in place to tackle this problem. In time we should see fewer students who need remedial education because they were in schools that failed to prepare them.
- The remedial student may be a recent high school graduate who did not take a college-preparatory curriculum in high school. A person who did not take a college-preparatory

curriculum who then decides to go to college and is admitted should, in most cases, need to take remedial courses. If most students who don't take a rigorous high school curriculum (college-preparatory or the equivalent) don't need assistance or remedial courses to be ready for college-level work, then these colleges' standards are probably too low. We should not be satisfied with situations in which new high school graduates have to take remedial courses in college because they chose not to take the necessary courses in high school or because they were not counseled properly by educators and parents. Educators and parents can and should do something about this.

- The remedial student may be a recent high school graduate who completed a college-preparatory curriculum but earned low grades. Remedial courses in an open-admission two-year or four-year college give this student a "second chance." A state is right to provide this second chance with requirements and restrictions on how long a student is eligible.
- The remedial student may be a recent high school graduate who was planning to go to college but decided not to take a college-preparatory mathematics course in the senior year. Here again, educators and parents can do something about this.

SREB states are making progress toward the goal of having more students ready for college. We are preparing students better for college and work, but we cannot claim that we have reached the goal that four of every five students who enter college will be ready to begin college-level work. This report describes:

- who needs remedial help and remedial courses in college;
- the impact of statewide policies for assessing college-level skills and for placing students into regular, advanced or remedial courses;
- different ways that remedial education is provided at two-year and four-year colleges and universities;
- how taking a college-preparatory curriculum in high school reduces the need for remedial courses in college;
- how taking a college-preparatory mathematics course in the senior year of high school is the best way to reduce the need for remedial mathematics courses in college; and
- how taking remedial courses affects students' success in college.

This report highlights the steps SREB states are taking to reduce the need for remedial courses. A better understanding of the "remedial problem" can help states to address the specific parts of the problem and make changes in earlier efforts if they are not working.

Mark Musick
SREB President

# Reducing Remedial Education:

## *What Progress are States Making?*

In the late 1980s the Southern Regional Education Board set the goal that, by the year 2000, 80 percent of all students entering college would be prepared for college-level work. Since then:

- More high school students are enrolling in college-preparatory curricula, and more of these students complete these curricula.
- Scores on college admissions tests are higher. Even though more students are taking the tests (usually resulting in lower average scores), the mathematics scores are the highest in nearly 30 years.
- More students enter four-year colleges ready to begin college-level work.
- More states and colleges and universities have established clear standards for what is required to begin college-level work.

With these improvements, nearly 80 percent of the students who now enter four-year colleges in most SREB states are ready for college-level work; more than 20 percent need at least one remedial course. At two-year colleges about 50 percent of first-time freshmen take at least one remedial course.

This report examines promising strategies and practices that states and colleges and universities have used to reduce the need for remedial study. To help policy-makers and educational leaders enact policies and establish practices that will prepare incoming students for college-level work, it also addresses the following important questions:

- Who needs remedial education?
- How many students entering college need remedial courses?
- Do state policies on college-level assessment and placement matter?
- Who should deliver remedial education?
- Does taking the right high school courses matter in reducing the need for remedial education?
- Why do so many students need remedial mathematics?
- What are states doing to address the problem that more than half of black and Hispanic students who begin college need at least one remedial course?
- How effective is remedial education?

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This report was prepared by Ansley A. Abraham, SREB director of the Doctoral Scholars Program, and Joseph D. Creech, SREB director of educational policies.

## *Who needs remedial education?*

There is no "typical" remedial student. Students who need remedial courses fall into two categories: recent high school graduates who begin college within a year of graduation and young adults who enroll in college a year or more after high school graduation. The first category — recent graduates who are not ready to do college-level work — is the most difficult to understand or rationalize. Colleges and universities generally expect students to have completed an academic core — at least four years of college-preparatory English and three years each in college-preparatory mathematics (Algebra I and higher), science and social studies. Students who need remedial courses usually did not complete a rigorous college-preparatory curriculum; completed a college-preparatory curriculum but earned low grades; or failed to take a college-preparatory mathematics course their senior year of high school.

Some SREB states are monitoring trends in remedial education. For example, Tennessee has tracked data on remedial students for more than 10 years. Nearly two-thirds of high school graduates who entered two-year colleges within one year needed at least one remedial course. Eighty percent of those who had graduated from high school more than a year before entering college needed academic refresher courses.

At Tennessee's four-year colleges and universities, 33 percent of all first-time freshmen took at least one remedial course. Again, remedial courses were less common among recent high school graduates (28 percent) than among those who had graduated a year or more before entering college (42 percent).

In 2000, Oklahoma issued its latest report about students who began college just after graduation from high school and those who entered college years after graduation. The results are similar to those in Tennessee. At Oklahoma's two-year colleges, 58 percent of recent high school graduates needed remedial courses and 54 percent of those who had graduated a year or more before entering college needed such courses.

The pattern was the same at four-year colleges and universities in Oklahoma. While 28 percent of the first-time freshmen who enrolled right after high school needed remedial courses in college, 58 percent of those who enrolled in college a year or more after graduating from high school needed remedial courses.

The data for Tennessee and Oklahoma show a clear pattern of a greater need for remedial support — both at two-year and four-year colleges — among students who have been out of school for a year or more. Policies and strategies need to reflect these findings.

## *How many students entering college need remedial courses?*

### As measured by using the ACT or SAT

Clearly, too many students need remedial courses. One-third of the nation's first-time, full-time freshmen in college need refresher courses before they are ready for college-level study.

It is difficult to determine how many of the region's high school graduates will need remedial courses because states, systems, and colleges and universities have various standards, and definitions of remedial work. Making comparisons among states requires the same standard on a single measure that can be applied to more than one state, system or college or university. For example, Arkansas, Oklahoma, Tennessee and West Virginia expect entering freshmen to score 19 or higher on the ACT English and math tests before they can enroll in beginning college-level courses. In SREB states that assign students to remedial courses based on their ACT scores, the cut-off scores range from 16 to 19.

If the most common standard (a score of 19 on the ACT) were used in all eight SREB states in which most high school seniors take the ACT (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee and West Virginia), the percentages who score below 19 in English range from 37 percent to 58 percent. In mathematics these percentages range from 49 percent to 74 percent. Nationally, 44 percent of students score below 19 on the English test and 48 percent score below 19 on the mathematics test.

An SAT score of 450 is estimated to be comparable to a 19 on the ACT. Of students nationwide who take the SAT, 47 percent score below 450 on the verbal test and 46 percent score below 450 on the mathematics test. The SAT is taken by most seniors in high school in eight SREB states (Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Texas and Virginia). In these states, the percentages of seniors who score below 450 range from 46 percent to 58 percent on the verbal test and from 47 percent to 59 percent on the mathematics test. In SREB states that assign students to remedial courses based on their SAT scores, the cut-off scores range from 400 to 480.

### As reported by SREB states

Because states have different definitions of remedial education, the Southern Regional Education Board compiled data reported by states. In every SREB state, more than 20 percent of students entering two-year colleges needed remedial courses in mathematics. The highest rate was more than 70 percent. In Arkansas, Kentucky, Louisiana and Tennessee, more than half of the students entering two-year colleges took at least one remedial course in reading, writing or mathematics.

According to states' reports for four-year colleges and universities, the percentages of entering students who took at least one remedial course in reading, writing or mathematics ranged from less than 10 percent to more than

40 percent. **Six SREB states — Georgia, Maryland, Mississippi, North Carolina, Texas and Virginia — have met the goal set in 1988 for four-year colleges. In these states, more than 80 percent of entering first-time freshmen at four-year colleges were ready for college-level courses and did not take a remedial course.**

The proportions of students who need remedial education are higher at two-year colleges than at four-year colleges and may reflect whether two-year or four-year colleges deliver remedial education in the state. (This will be discussed later.) Admissions policies also influence the proportions of students who need remedial education at four-year colleges and universities. For example, enrollment caps can increase competition for limited spaces in the freshman class, thus making institutions more selective and reducing the number of students admitted who need remedial courses.

## *Do state policies on college-level assessment and placement matter?*

They matter a lot. The Southern Regional Education Board has recommended since the mid-1980s that states establish statewide or systemwide standards for student performance and for placement of students into college courses. Establishing standards is important for several reasons:

- First, statewide standards establish criteria that determine whether students can begin college-level courses, regardless of whether they enroll at a two-year technical college or a research university. Statewide standards do not mean that colleges and universities in the state must have the same standards for admission. Some colleges and universities may set higher standards.
- Second, statewide standards allow educational leaders to assess more accurately the academic preparation, performance and needs of students entering college. Further, students statewide can be measured against the same standard.
- Third, statewide standards send a consistent message to students, parents and high schools about how well students need to be prepared in order to begin college-level work.

States now fall into two categories based on their policies on assessment and placement. (See Table 1.) States in the first group mandate which assessments are used and how well students must perform on the assessments as an initial step in their placement into college-level courses. SREB states that fall into this category are Arkansas, Florida, Georgia, Mississippi, Oklahoma, South Carolina, Tennessee, Texas and West Virginia.

States in this category take various approaches to statewide policies and set different standards. For example, as an initial step in the assessment process, Georgia students must score above 430 on the SAT verbal test and above 400 on the mathematics test to be placed in introductory college-level courses in those subjects for college programs that lead to bachelor's degrees. Florida sets minimum requirements for both the SAT and ACT, and students who do not meet these requirements are assessed further to determine remedial placement in mathematics, reading and writing. The minimum score for both the SAT verbal and

Table 1
**Policies on Placement Into Remedial Courses**

| | Statewide policy determines remedial placement | Institutional policies determine remedial placement |
|---|---|---|
| Alabama | | X |
| Arkansas | X | |
| Delaware | | X |
| Florida | X | |
| Georgia | X | |
| Kentucky | | X |
| Louisiana | | X |
| Maryland | | X |
| Mississippi | X | |
| North Carolina | | X |
| Oklahoma | X | |
| South Carolina | X | |
| Tennessee | X | |
| Texas | X | |
| Virginia | | X |
| West Virginia | X | |

Source: Survey of higher education agencies, 2000

SAT mathematics tests is 440; minimum ACT scores are 18 for reading, 17 for English and 19 for math. In Arkansas, Oklahoma, Tennessee and West Virginia, students must score at least 19 on the ACT math test. Texas students must achieve a minimum score on the state-developed placement test, the Texas Academic Skills Program exam. Because states' policies vary greatly, comparing states' results is difficult.

These examples point out two important factors in statewide placement policies. First, state policies (such as Florida's) may allow multiple tests, with different scores on these tests to determine academic placement. Second, some states (such as Florida, Georgia and Oklahoma) use statewide standards as a broad measure — a "first cut" — in determining remedial need, then allow colleges and universities to administer additional assessments to gauge students' skills and place them in courses more accurately.

In states with statewide policies on assessment and placement, similar patterns emerge. As standards are established, remedial rates rise initially — sometimes substantially. But the remedial rates decline over time. Holding all students who enter college to a single standard — even a low standard — results in higher percentages of students who need at least one remedial course.

## The Oklahoma State Regents for Higher Education response

Oklahoma's statewide policy on assessment and placement has improved student preparation for college and reduced the need for remedial education. Several key initiatives were involved:

- Regents required the use of the ACT subject tests and set a minimum score of 19 as the "first cut" in determining students' eligibility for admission and need for remedial education.
- Regents increased the number of high school core academic courses required for college admissions from 11 to 15.
- Regents established the Oklahoma Educational Planning and Assessment System (EPAS) for eighth- and 10th-graders. The assessments, based on the ACT, give students, parents and schools feedback about student performance and alert them to the need to enroll in college-preparatory courses.
- Regents implemented an initiative to get mathematics teachers and college faculty to work together to improve students' performance.
- Regents produced an honest, statewide report that pulled no punches about remedial education.

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Oklahoma State Regents for Higher Education, *Student Remediation Report*, 1999.

A 1999 Oklahoma study reported that initiatives to improve student preparation for college initially caused an increase in the need for remedial education but over time led to a decrease. Since the policy took effect in fall 1994, there have been declines in the percentage of students whose ACT scores are lower than 19 and in the percentage of recent high school graduates who take remedial courses.

The second group of states does not have statewide policies on assessment and placement. In these states — Alabama, Delaware, Kentucky, Louisiana, Maryland, North Carolina and Virginia — each institution determines which assessment will be used and develops its own placement policy. (See Table 1.)

Since the mid-1980s, the Southern Regional Education Board has supported statewide standards for college-level assessment and placement. Statewide standards send a clear message to all students, their parents and teachers, and schools about what skills and knowledge are required to begin college-level work at all institutions, from two-year colleges to doctorate-granting universities. Such standards also hold all high schools and colleges accountable for student performance and enable states to make more-informed policy decisions. Statewide standards allow comparisons among institutions that may not be possible if all colleges and universities use different assessments and require different minimum scores on those assessments.

## *Who should deliver remedial education?*

Educators and legislators over the last several years have debated whether two-year or four-year colleges should provide remedial education. Some say remedial education has no place in higher education at all. Others say all "below-college-level" academic courses should be delivered by two-year and technical colleges because it is more economical. Some say students or high schools should pay the total cost of remediation. A third group maintains that both two-year and four-year colleges should provide remedial courses. Some say that all four-year colleges except for the state's top research institutions should offer remedial courses.

Two-year and technical colleges deliver more than 60 percent of all remedial courses nationwide, and some states want them to deliver *all* remedial courses. Since the mid-1980s, 30 states have proposed policies to make two-year and technical colleges responsible for all remedial education, according to a National Center for Developmental Education study. Only seven states — including two SREB states (Florida and South Carolina) — have passed laws to reduce or eliminate remedial programs at four-year colleges and universities. In Florida (except for Florida A&M University) and South Carolina, four-year colleges and universities can arrange remedial instruction for their students through contracts with two-year colleges. Georgia, Texas and Virginia have considered policies to limit which colleges offer remedial courses, and other SREB states likely will give serious consideration to such policies. Policies that make two-year and technical colleges responsible for providing remedial education raise other issues related to student access and student transfers to four-year colleges and universities.

## *Does taking the right courses in high school matter in reducing the need for remedial education?*

Yes, it does matter. The SREB report *Better Preparation, Less Remediation* asserted the importance of taking the right sequence of high school courses — an academic core of four years of college-preparatory English and three years each in college-preparatory mathematics (Algebra I and higher), science and social studies — and making sure that these courses are academically rigorous. Two important findings are linked to taking the right courses:

- ACT and SAT scores are higher in states where more students take the academic core than in other states.
- Students who take the academic core are less likely to need remedial courses in college than are other students.

*For example, almost 80 percent of Georgia's high school graduates who did not complete an academic core of college-preparatory courses took at least one remedial course in reading, writing or mathematics in college. Conversely, only 20 percent of the students who completed a college-preparatory curriculum needed remedial courses.*

The data for Maryland are just as clear. A recent report found that high school graduates who completed a college-preparatory curricu-

lum earned better grades in their first college-level courses than those who did not complete a college-preparatory curriculum — both at two-year and four-year colleges. These data were examined in several ways — by race, gender, performance in first college math or English course, grade-point average after first year in college, cumulative grade-point average, and type of college attended. *Students who took the core curriculum consistently performed better than students who did not take the core curriculum.* (See Table 2.)

## *Why do so many students need remedial mathematics?*

Mathematics courses account for a larger share of remedial courses offered by most colleges than any other subject. At two-year colleges in SREB states, the percentages of students who take remedial math range from less than 30 percent to more than 75 percent. In eight SREB states, at least half of entering freshmen at two-year colleges and one-fourth of those at four-year colleges need remedial mathematics.

Why are so many students unprepared for college-level mathematics when they enroll? One reason is that many states do not require enough college-preparatory courses in mathematics for high school graduation. Two SREB states, Alabama and South Carolina, require four math credits (Algebra I and higher) for graduation from high school. All other states in the region require three math credits of Algebra I or higher.

While the number of math credits is important, the rigor and content of the math courses is just as important — if not more so. Most SREB states — Arkansas, Georgia, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia — have implemented or are planning to implement "end-of-

Table 2
**Percent of Students Who Need Remedial Courses in College, Maryland, 1998-99**

| | Mathematics | English | Reading |
|---|---|---|---|
| **Two-year colleges** | | | |
| Take college-prep courses | 38 | 21 | 25 |
| Do not take college-prep courses | 49 | 32 | 35 |
| **Four-year colleges** | | | |
| Take college-prep courses | 11 | 5 | 6 |
| Do not take college-prep courses | 18 | 9 | 9 |

Source: *College Performance of Maryland High School Graduates: Student Outcomes and Achievement Report,* September 1999

course" testing programs. These tests measure students' skills and knowledge at the end of a course against a predetermined set of skills and knowledge that must be mastered before students can go on to the next course or grade. This means all students statewide will be measured against the same standards.

Another reason students enroll in remedial math is that states' mathematics requirements for college admission may be too low. All 16 SREB states require or recommend a minimum standard of three mathematics courses (Algebra I and higher) for college admission. Four SREB states — Arkansas, Georgia, North Carolina and Oklahoma — have raised or soon may raise the mathematics requirements for admission to four-year colleges to four credits. Research shows that students who take Algebra I by ninth grade are the most likely to go on to college. However, students who complete Algebra I in ninth grade can complete the required mathematics courses by the end of the 11th grade. Students who follow the path of least resistance will not take a mathematics course their senior year and still will meet the requirements for high school graduation and admission to college. Only the most informed and motivated students exceed the minimum requirements.

By being away from mathematics for more than a year, students who skip mathematics in their senior year are out of practice when they enter college and, not surprisingly, often need refresher courses. The U.S. Department of Education report *Answers in the Tool Box* shows a clear relationship between the highest level of mathematics taken in high school and the likelihood of achieving a bachelor's degree. For example, a student who completes calculus in high school (usually in the senior year) is more than twice as likely to earn a bachelor's degree as a student who takes no mathematics beyond Algebra II and geometry. Based on a College Board study that found similar results, Georgia increased its mathematics requirements for high school to four courses.

An additional problem is that school districts may have different definitions of what constitutes Algebra I. The curricular content and rigor may vary markedly from district to district. Why else would students from particular schools or districts need remedial courses despite meeting all of the mathematics requirements? Colleges need to have a procedure for reporting back to high schools on students whose transcripts (courses and grades) show them as "college-ready" but who need remedial courses before they are ready to begin college-level work. Such reports serve no purpose unless high schools and colleges use them systematically to improve the educational system.

## *What are states doing to address the problem that more than half of black and Hispanic students who begin college need at least one remedial course?*

An SREB study of remedial education found that, of every 10 recent high school graduates who enroll in remedial courses at public colleges and universities, six were white, three black and one Hispanic. Data for each group of students were startling. Among black and Hispanic full-time freshmen, about 52 percent needed at least one remedial course in reading, writing or mathematics when they began college. States have not addressed this

issue adequately; they need to do so in order to make progress toward the goal of having 80 percent of college freshmen ready for college-level work.

State reports on remedial education do not contain enough data that address two basic questions:

- By race/ethnic origin, what percentages of recent high school graduates and of adults who have been out of school for more than a year are enrolled in at least one remedial course?
- What factors explain the gap between minority and majority students' readiness to begin college-level work?

Most SREB states report the percentages of college students who need remedial courses by race/ethnic origin. No state report explains why the gaps exist. For example, the Maryland report to high schools shows data for racial/ethnic groups of students who enrolled in the college-preparatory curriculum in high school and those who did not. The study found that students who took the college-preparatory curriculum were less likely to need remedial courses than students who did not. This finding held true regardless of students' race, gender or grade-point average. The study also found that black and Hispanic students who did take the college-prep curriculum in high school still were consistently two or three times more likely than white students to be enrolled in remedial math, English or reading.

In Florida, there are three sections (mathematics, reading and writing) on the entry-level placement test. The pass rate for black students was about 50 percent for each section; the pass rate for Hispanic students was about 60 percent for each section; and the pass rate for white students was about 80 percent. A 1999 Florida report on college readiness showed that the percentage of black students who needed remedial courses in college was twice that of white students. Also, the percentage of black students who needed remedial courses in all three subjects (mathematics, reading and writing) was four times that of white students, and the percentage of Hispanic students who needed these courses was twice that of white students.

The examples in Florida and Maryland likely are mirrored in other SREB states. This serious problem in school/college connections has received too little attention. State government and school leaders and college and university leaders cannot accept a situation in which half of the black and Hispanic students who enter college lack the necessary skills and preparation to do college-level work.

## *How effective is remedial education?*

Remedial education's effectiveness can be assessed by answering several questions:

- How many students complete remedial courses, and how well do they perform in these courses?
- How well do students who complete remedial courses perform in their first college-level courses and in subsequent courses?
- How many students who take remedial courses earn college degrees?

Unless states and colleges and universities systematically ask and answer questions such as these, it is not possible to determine whether remedial programs are effective or how to improve them. Unfortunately, systematic reporting about remedial education is sporadic at best. Few SREB states can answer the three basic questions above.

Students who take one or two remedial courses have a relatively good chance of earning bachelor's or associate's degrees. A study by Clifford Adelman of the National Center for Education Statistics reported what happened to students as they moved through college. Sixty percent of those who took no remedial courses — and 45 percent of those who took two remedial courses — earned bachelor's or associate's degrees by age 30. Thirty-five percent of students who took five or more remedial courses earned degrees — more than would have earned a degree if they had not been offered an opportunity.

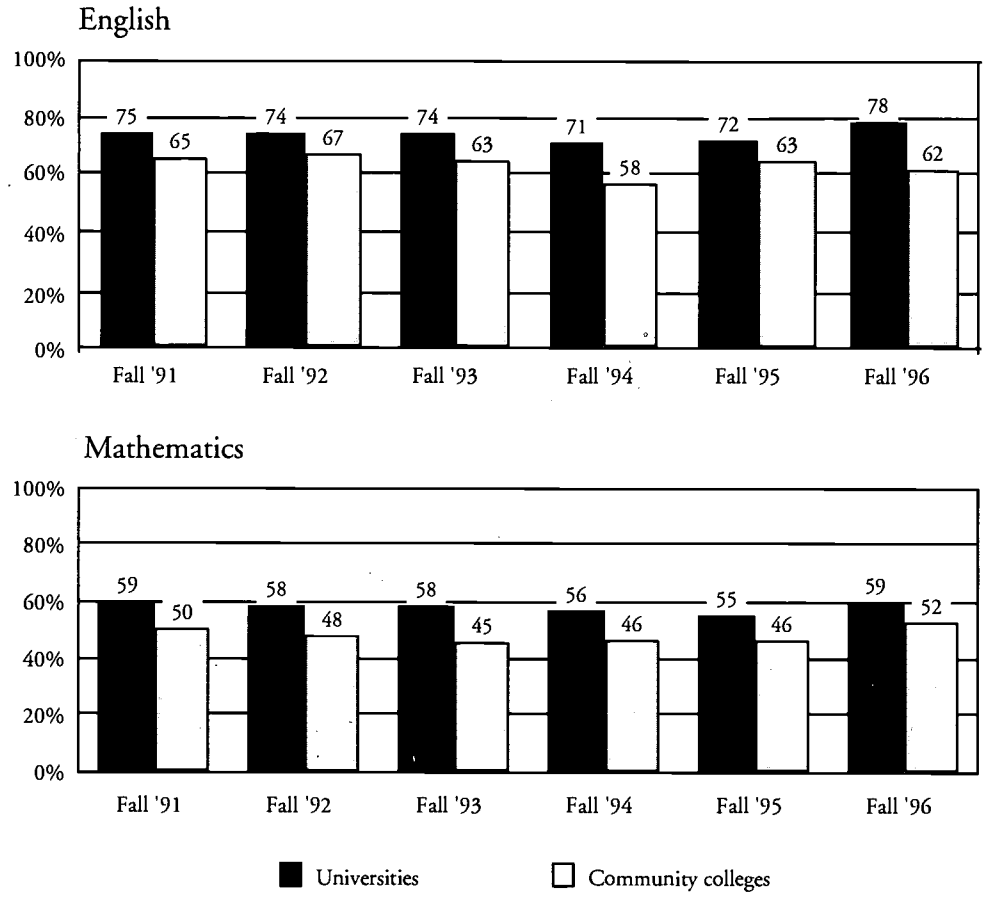
A study in Florida found that students who needed more than one remedial course when they entered two-year colleges were unlikely to transfer to four-year colleges and universities. The study showed that about 30 percent of the students who were "college-ready" and needed no remedial courses when they enrolled in two-year colleges later transferred to four-year colleges and universities. Students who took remedial courses in only one subject (reading, writing or mathematics) were the second-likeliest to transfer; 13 percent of these students went on to four-year colleges and universities. Only 11 percent of the students who needed remedial courses in two subjects went on to transfer, and only 4 percent of students who needed remedial courses in all three subjects transferred.

A Kentucky study also addressed student performance in remedial courses and in their first college-level courses after remedial courses. The study examined the pass rates in remedial courses for students who enrolled between fall 1991 and fall 1996. The percentages of students who passed remedial courses in mathematics and English did not vary much from year to year and consistently were higher at universities than at community colleges. (See Figure 1.) Nearly 60 percent of students in universities passed remedial mathematics, compared with about half of the students taking remedial mathematics in community colleges. About 75 percent of students taking remedial English courses in universities passed, compared with over 60 percent of the students taking such courses at community colleges.

Kentucky's study also examined how students performed in entry-level mathematics and English courses. (See Figure 2.) The study found that, at universities, the pass rates (grade C or higher) in entry-level courses in mathematics were slightly higher among students who had taken and passed remedial courses than among *all* students in these entry-level mathematics courses. Fifty-six percent of students who had taken remedial math courses passed their first college-level courses; the figure for all students was 55 percent. In English, the pass rate was slightly higher for *all* students than for those who had taken remedial courses. In English, 73 percent of those who had taken remedial courses passed, compared with 75 percent of all students.

The students at Kentucky's community colleges who took and passed remedial mathematics and English courses were even more successful in entry-level courses. While 69 percent of students who had taken remedial

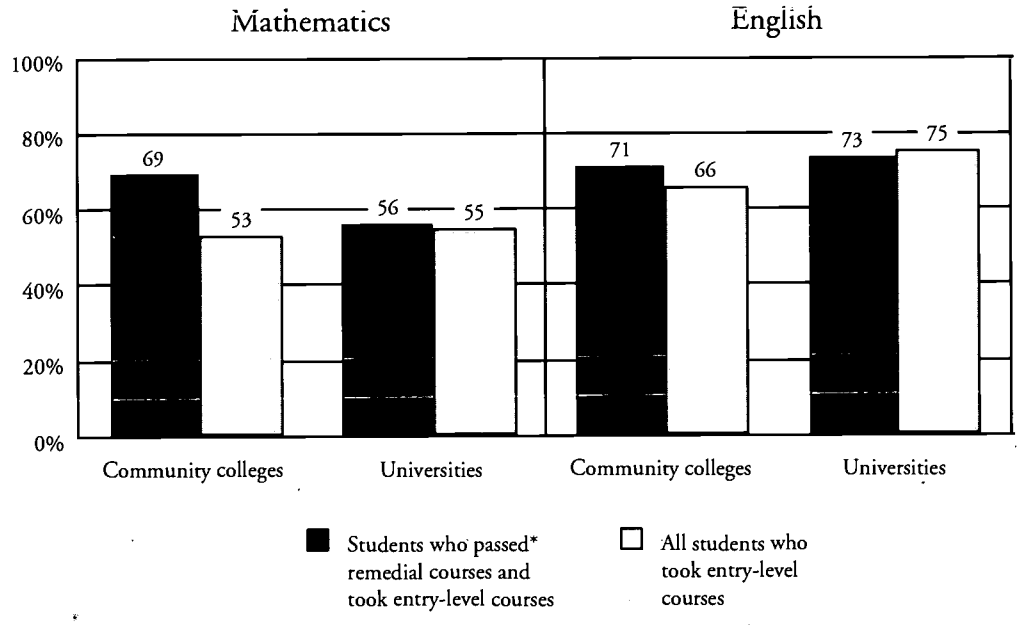
Figure 1
**Percent of Students Passing* Remedial Courses, Kentucky**




Source: Kentucky Council on Postsecondary Education, 1999
* Grade C or better

mathematics passed (earned at least a C) entry-level math courses, 53 percent of *all* students who took entry-level mathematics passed. While the difference in English was smaller, the percentage of students who took remedial courses and passed entry-level courses (71 percent) still was greater than the percentage of all students who passed these courses (66 percent).

Figure 2
**Percent of Students Who Passed* Entry-level Courses, Kentucky**




Source: *The Status of Kentucky Postsecondary Education: Progress Toward Reform,* 1998
* Grade C or better

## *What should states do to reach the goal that four of every five students entering college will be ready to begin college-level work?*

SREB states are making progress toward the college readiness goal. State actions to improve performance by younger students — such as getting more children ready for first grade, increasing the percentage of students who earn high school diplomas, and improving the quality and rigor of courses that students must take to graduate from high school — are helping to prepare students for college. Even so, SREB states still cannot claim that they have reached the goal that *four of every five students entering college are ready for college-level work.*

Simple policy decisions will not erase the issue of remedial education. Resolving it will take understanding and long-term commitments by legislative and educational leaders. They will need to enact new policies and follow through on existing ones that are proving effective in reducing remedial education.

## States should take several actions:

- States should monitor closely whether students who need remedial education are recent high school graduates or adults who have been out of high school for a year or more. A "one-size-fits-all" approach to remedial education will not work.
- States should increase the required number of mathematics courses beyond Algebra I for high school graduation and should look at ways to increase the rigor of the high school curriculum. Evidence from SREB states suggests that students are less likely to need remedial courses if they complete a core of challenging academic courses in high school and take a high-level mathematics course in the senior year.
- States should establish statewide standards for college-level assessment and placement in college courses. The Southern Regional Education Board recommended more than 10 years ago that states establish such standards, and nine have done so. Recent emphasis on educational accountability makes such standards even more important. Two-year and four-year colleges and universities need to agree on the skills and knowledge that students must have to begin college-level study. They then need to communicate effectively with students, parents and schools about these requirements.
- States need to be careful in considering proposals to eliminate remedial courses or offer them only in two-year colleges. Such actions could limit access to higher education.

## Actions schools and colleges and universities should take:

- Colleges and universities should work to: (1) encourage students in the middle grades to begin planning for college and help them understand the knowledge and skills they will need to complete a college-preparatory curriculum in high school; (2) guide high school students in taking courses that will prepare them for college-level study; and (3) help high school students apply for college admission and financial support. Such efforts can help students identify their academic weaknesses and improve their knowledge and skills. Georgia's Postsecondary Readiness Enrichment Program and Oklahoma's Educational Planning and Assessment System are examples.
- Colleges and schools both need to make better use of information from existing college-to-school reports on how high school graduates perform as college freshmen. While these reports may need to be improved, the information is too valuable to gather dust. The reports can help college faculty and high school teachers work together to improve college-preparatory courses in English, mathematics, social studies and science.

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