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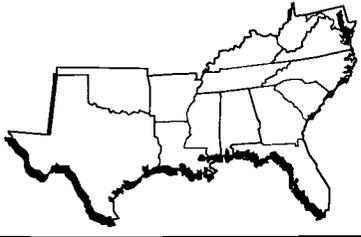
ABSTRACT

More than a decade ago, states in the Southern Regional Education Board (SREB) region began raising high school graduation standards to ensure that all students would take the classes they need. Despite improvements, results have not met expectations. Today many more students in the SREB states are taking courses that appear to be more rigorous--more mathematics, science, English, social studies, and foreign languages. However, average scores on college entrance tests are up but not significantly so. Employers complain that students graduating from high school do not have the skills needed in the workplace. This report examines why the new policies have not met expectations. It concludes that some core courses were simply redefined and relabeled; challenging courses were not necessarily required for graduation; and no quality-control measures were implemented. Simply requiring students to complete credits in the core subject is not enough. Not requiring challenging courses results in mediocre test scores, high percentages of students entering college in remedial courses, and graduates who are unprepared for the workplace. Core curriculum courses must be challenging and build on prior learning. The course objectives must be linked to curriculum frameworks and described clearly for teachers, students, and parents. Finally, assessments must gauge the quality of core courses, and passing standards must be set high enough. Recommendations are offered for state leaders. (LMI)

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GOALS FOR EDUCATION



Educational Benchmarks
1996

ED 406 746

High School Graduation Standards: *What We Expect and What We Get*

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Southern Regional Education Board

EA 028 314

GOALS FOR EDUCATION

BY THE YEAR 2000 —

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

*SREB Goals for Education
Commission for Educational Quality, 1988*

More than a decade ago, states in the SREB region began raising high school graduation standards to insure that *all* students would take the classes they need. States increased the number of credits required for graduation, established high school graduation examinations, and demanded that students enroll in more core English, mathematics, science and social studies courses. And they did—in record numbers. More students are taking more courses, and especially more courses in the core subjects. Nearly all are passing the high school graduation tests, which unfortunately are set at the eighth or ninth grade level.

Despite all this, a third of entering college freshmen wind up in remedial courses in English or mathematics. Average scores on college entrance tests have not changed significantly. Employers say many high school graduates do not have the skills they need to learn and perform a job.

Why haven't the new policies gained us more ground and what have we learned? First, it is obvious that some of the "core" courses students take are just not rigorous enough. For example, you may think that "English is English" but we have "basic," "general/standard," "college prep/high" and "honors" English, and they all count toward high school graduation. It is still possible for students in high schools to take three years of mathematics without ever getting beyond Algebra I, let alone geometry, trigonometry or pre-calculus. Also, while the core curriculum in many states has demanding courses—or they appear to be demanding—students can graduate without completing them.

State wide performance standards measured by new end-of-course assessments or more rigorous graduation examinations may help assure that students graduate ready for the next step in their lives—a job, an apprenticeship, technical school or college.

Mark D. Musick, President
Southern Regional Education Board

High School Graduation Standards: *What We Expect and What We Get*

Raise standards for high school graduation!

So says a large majority of Americans. Nearly half of all Americans believe it is possible to get a high school diploma without having minimal reading and writing skills or being able to do basic arithmetic. And more than three-fourths agree students should not be passed until they have mastered the skills and content in every required course.

These findings from recent opinion polls and interviews reveal significant public skepticism about the rigor of high school graduation requirements. Ironically, they echo concerns expressed in the early 1980s—concerns that triggered a decade of state and local actions aimed at strengthening the academic skills of America's high school graduates. As we look at today's opinion polls and listen to the criticisms of today's business and community leaders, it is appropriate to ask *what we expected* from 10 years of efforts to raise high school graduation standards, and *what we have gotten*.

The answers may help explain why the public is disappointed.

The public expects that all students will complete a strong set of courses in core subjects (four English, three mathematics, three science and three social studies) before graduating—

- Only about three of five do. While the percentage of high school graduates in SREB states completing 13 or more courses in the core subjects is almost

four times greater than it was in 1980, a significant number of students (over 40 percent) still graduate from high school without completing what intuitive good sense tells us is a basic core curriculum.

- Students who take a rigorous college preparatory curriculum and do well in it are generally prepared for college or to learn on the job after high school. But the two-thirds of students who do not may be at risk if they are not in a strong, focused vocational program.
- Only five SREB states required *all* students who graduated in 1995 to complete 13 courses in the core subjects.

The public expects that courses in the core subjects will be rigorous—

- Too often four years of study means similar course content delivered four times, not four different courses. Courses in the core subjects may not cover the same material for all students. Courses with the same title may have different content and expectations for different groups of students. This is one reason many observers believe curriculum guides and frameworks must not only spell out the skills students should possess but must also outline the content that all students should master.
- In a review of curriculum standards in the 50 states, the American Federation of Teachers concluded that only six SREB states (Georgia, Mississippi, South Carolina, Tennessee, Texas, and Virginia) had

standards specific enough to establish both skills and content for a core curriculum. California, Colorado, Delaware, Hawaii, Michigan, New Hampshire, and Utah also met the AFT's specificity test.

- Only eight SREB states specify that *all* students complete Algebra I or its equivalent. It is encouraging that most students do take Algebra I.
- Even in many states that require three units of mathematics, any three units will do.

The public expects that courses in the core subject areas will be taught by teachers whose college major was in those subjects—

- Frequently they are not. Almost 40 percent of the nation's teachers whose main assignment is teaching mathematics did not major in mathematics or mathematics education in college. Among science teachers, 30 percent did not major in the subjects they teach nor in science education. Three of four English teachers majored in English and English education, and four of five social studies teachers completed a college major in their field.

The public expects that passing scores on high school exit examinations will mean that high school graduates have mastered the skills and content of core courses—

- Most current high school graduation tests do not test for such mastery. Eleven SREB states (Alabama, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia) require students to pass a "minimum competency" test to graduate from high school. But most of these tests are not linked to the curriculum for courses in grades 9-12, and students are not held to high performance standards on these tests. Nearly all high school seniors pass these tests. Yet scores on college admissions and placement tests reveal significant academic weaknesses among more than a third of high school graduates who enter college.
- Many current state high school exit exams measure little more than what students should know when they *enter* high school. Even in states where high school exit examinations are linked directly to the curriculum for high school courses, the passing grades are set too low to assure the integrity of the diploma.

What happened when higher standards were called for in the 1980s?

Fifteen years ago the Southern Regional Education Board report *The Need for Quality* called on states "to establish and raise standards for the high school curriculum." Why, after more than a decade of effort to increase the academic value of a high school diploma, are we so disappointed in the results? Why haven't we achieved more?

It is not because we ignored the problem. By the mid-1980s, states had responded overwhelmingly to warnings that students were not graduating from high school ready for college or the workplace. Every state in the South enacted legislation and adopted policies that state leaders believed would result in students completing a more rigorous high school curriculum.

As a result, by the end of the 1980s—

- All SREB states had new standards for high school graduation;
- All SREB states except one had increased the number of credits required for high school graduation to 20 or more;
- Most SREB states had established Advanced, Honors, Certificate of Merit and other special recognition diplomas for students in academically challenging programs, and large numbers of students have enrolled;
- Many SREB states had adopted policies that created more Advanced Placement courses of college-level study in high school;
- More than half of the SREB states had eliminated the “general” curriculum and expected students to complete either an academic or technical/vocational program of study;
- Four-year colleges and universities were more specific about the minimum courses required for admission.

By any measure, the changes in the kinds of courses that high school graduates take have been dramatic. Consider that in 1980, less than 15 percent of the nation’s high school graduates had completed the basic core curriculum recommended by the National Commission on Educational Excellence. By 1990, 40 percent of the nation’s graduates—and 54 percent of the graduates in the SREB states—completed 13 or more courses in the core subjects.

Today many more students in the SREB states are taking courses that, at least in name, appear to be more rigorous—more mathematics, more science, more English, more social studies and more foreign languages. That’s the good news. But have we seen the improvement in achievement we might expect from such a change?

Average scores on college entrance tests are up, but they have not shown significant improvement. Employers complain that students graduating from high school do not have the skills needed in the workplace. One in three students entering college needs remedial work in communications or math-

What’s in a Strong Academic Core?

In 1983, the National Commission on Excellence in Education stated that all high school students should complete at least:

- **Four units of English;**
- **Three units of mathematics (Algebra I and higher);**
- **Three units of social studies;**
- **Three units of science.**

The Commission also recommended one-half unit of computer science and two units of foreign language for students planning to attend college.

ematics or both. As someone observed, “Our efforts have been dramatic, but the results have not. We have moved a lot but have not gone very far.”

Several factors help explain the lack of “payoff” in academic performance. To some extent, “core” courses were simply redefined and relabeled—in effect, making them less rigorous and less challenging. That was easy to do because of the absence of end-of-course examinations and because high school exit

examinations are often not tied to the high school curriculum or to specific expectations about what a high school graduate should know and be able to do. Most state policies do not require all students to complete the courses specified in the core curriculum. In short, the core curriculum was defined, but challenging courses were not necessarily required for high school graduation. And no quality control measures were implemented to assess the rigor of the courses that were.

Are enough students completing the core curriculum?

It made sense fifteen years ago and it makes sense now that every student should complete a basic core curriculum. It mattered then and it matters now what students take in high school. Not surprisingly—

- Students who take more challenging mathematics courses know more mathematics.
- Students know less about subjects they do not study.
- Students who complete a college preparatory curriculum score higher on college admissions and college placement tests.
- Students who complete a more challenging vocational curriculum like the one recommended in SREB’s *High Schools That Work* program perform better and score higher on a national assessment than those who complete a more traditional vocational program.
- Students who complete a core academic program earn better grades in college courses than those who do not, and

fewer of them need to take remedial courses.

Consider what we know about the 1992 high school graduates’ aspirations and the courses they completed in high school.

When the 1992 high school graduates reach age 30, almost 90 percent expect to have careers that are likely to require some education beyond high school. But what did the 1992 graduates do while they were in high school?

- Less than one-half completed four years of English, three years of social studies, three years of mathematics, and three years of science.¹
- Less than one-third completed the basic core curriculum (described above) plus a one-half year course in computer studies.
- Less than one-fourth of high school graduates in 1992 completed a college preparatory curriculum comprised of the basic core curriculum, one-half year of computer studies, and two years of foreign language.

¹ U.S. Department of Education, NCES, “1990 High School Transcript Study” and “National Education Longitudinal Study” as reported in *Digest of Education Statistics*, 1995, Table 135, p.134.

Put another way, about 9 of 10 recent high school graduates expect to have jobs that will require education and training beyond high school, but only between one-third and one-half complete high school courses that give them the best chance of being successful in education and training programs after high school.

Every SREB state requires students to complete more units of study now than in 1980. (Most required only 18 units in 1980 compared to 20 or more now). Yet, in 1995, only five SREB states (Arkansas, Florida, Georgia, Louisiana, and Maryland) required all graduates to complete 13 or more credits in the core subjects. Alabama will require 13 or more units in the core subjects for future graduates. North Carolina's Education Stan-

dards and Accountability Commission has recommended that the State Board of Education drop the General Studies Curriculum and adopt "College Prep and College Tech Prep" curricula, both of which require the completion of 13 credits in the core subject areas.

Algebra I is the highest level mathematics course required for graduation in any SREB state, and *only eight SREB states specify that all students must pass Algebra I or its equivalent to graduate*. More than 90 percent of those graduating from the nation's high schools in 1992 had taken a course titled "Algebra I;" slightly more than half had taken Algebra II and geometry; and less than one of five had taken Algebra II, geometry and trigonometry (minimum pre-

Courses Required of All Students For High School Graduation, 1994-95

	All Courses	Total in Core Subjects	English	Social Studies	Mathematics	Sciences
Alabama	22	11	4	3	2	2
Arkansas	21	13	4	3	3	3
Florida	24	13	4	3	3	3
Georgia	21	13	4	3	3	3
Kentucky	20	11	4	2	3	2
Louisiana	23	13	4	3	3	3
Maryland	21	13	4	3	3	3
Mississippi	19	11	4	2	3	2
North Carolina	22	12	4	2	3	3
Oklahoma	20	10	4	2	2	2
South Carolina	20	12	4	3	3	2
Tennessee	22	11	4	1	3	3
Texas	21	12	4	3	3	2
Virginia	21	12	4	3	- 5 Combined -	
West Virginia	21	11	4	3	2	2

Source: SREB Survey of State Education Agencies, SREB States, 1995; *A Nation at Risk*, 1983; U.S. Department of Education, Schools and Staffing Survey, 1990-91 (as reported in *The Condition of Education 1995*, Tables 24-3 and 24-4).

requisites for an entry-level college mathematics course). Considering how little mathematics most high school graduates

complete, the percentage of college freshmen needing remedial mathematics is surprisingly low.

States are taking steps to toughen the curriculum

The evidence is clear. Simply requiring students to complete credits in the core subjects is not enough. And most SREB states are beginning to act on the evidence. Every state is taking steps to more clearly define what students should know and be able to do by revising, or developing new curriculum standards. Depending on the state, expectations are outlined in documents called “curriculum frameworks,” “standards of learning,” “courses of study,” “academic expectations,” “quality core curriculum,” “priority academic skills,” “essential elements,” or “curriculum structure.” Some are more detailed than others and descriptions of content and objectives vary in style and language.

In addition to defining content, some frameworks provide specific examples or lists of teaching and learning activities. Others leave the development of strategies and daily classroom activities to local schools and

teachers. But the broad descriptions of what high school graduates should know and be able to do in the areas of communications, mathematics, science, and social studies are similar from state to state.

Statements of what all high school graduates should know and be able to do can provide students, parents, teachers and the public with a better idea of the objectives of schooling. All states want their high school graduates to be able to communicate clearly, think critically and solve problems. While some are more specific than others about teaching strategies, content and assessment activities, most leave a good bit of room for local schools, school systems and teachers to decide what will work best in helping students achieve the objectives. For example, most do not rule out teaching mathematics through hands-on learning, nor do they rule out a more traditional theoretical approach.

Strengthening the connections between courses and curriculum frameworks

English, mathematics, science and social studies courses that comprise the core curriculum required for high school graduation should be those that provide students with the knowledge and skills stated in each state’s curriculum frameworks. But an examination of some typical high school course guides makes one skeptical about the courses many students take.

Here is an actual list of senior English courses offered in a typical high school in an SREB state:

- **Basic English 12:** Provides further development of practical communications skills in reading and listening comprehension and in oral and written activities in a variety of real-life situations. (1 unit)
- **General/Standard English 12:** Covers grammar, vocabulary acquisition, composition and literature, including selected writings by major British writers. Develops skills in reading, writing, speaking and listening. (1 unit)

STUDENT ACHIEVEMENT

- **College Prep/ High English 12:** Primarily deals with the development of English literature from the Anglo-Saxon period through the twentieth century. Language, grammar review, vocabulary acquisition, analytical theme writing and critical reading are emphasized. (1 unit)
- **AP Honors English 12:** Offers a rigorous, advanced level study of British literature and adds collateral independent reading. The primary emphasis is on analytical reading and writing. Students may elect to take the Advanced Placement examination at the end of the course. (1 unit)
- **Language Arts Competency 12:** Provides instruction in basic reading/survival skills for students who have not passed the state competency test. (1 unit)
- **English as a Second Language 12:** Provides individualized study in reading, writing, and speaking English for qualified limited English proficiency students. (1 unit)

A student who completes *any* one of these courses will earn one unit of credit in English language arts that will qualify the student for graduation. There are at least three levels of English (basic, average and

advanced) in grades 9, 10, 11, and 12. Students are placed into the different levels based on their past performance in English courses and scores on a standardized test. But how likely is it that students who complete “basic” English will be able to communicate effectively? Is four years of “basic” English good enough?

At the same school, any three units of mathematics, chosen from the courses listed on page 10 will meet graduation requirements. For example, the three required credits in mathematics can be met by completing Pre-Algebra (1 unit), Algebra 1A (1 unit), and Algebra 1B (1 unit). Will such a sequence equip students with the mathematical reasoning and problem-solving skills needed after high school?

Not all high schools in all states offer these courses, but the examples given are more the rule than the exception. The issue is not whether the curriculum has something for everybody and something that everybody can pass. The issue is if the “basic” level is good enough. Are high school graduates who pass only the least challenging courses prepared to compete successfully for good jobs, and are they ready to continue education after high school?

How can we make sure that courses are “good enough”?

One way to discourage “watering down” the content of core courses is to develop assessments that are linked directly to the curriculum standards and are given at the end of each course or as part of a rigorous graduation examination. The Advanced Placement Program provides a good model of linking end-of-course assessments with course content.

A few SREB states have or are establishing end-of-course assessments. Georgia and Louisiana tie their exit examinations to curriculum guides for the core subjects that all high school students must pass to graduate. Kentucky’s curriculum guides and assessments are linked to its curriculum standards, but are used only for school and district ac-

Mathematics Choices At a Comprehensive High School

An impressive list, but any two or three will do if students are not in a college preparatory curriculum. And most students are not.

Competency Mathematics: This course is required of students who did not or may not pass the mathematics portion of the state competency test. Mathematics credit is earned for each semester taken to a maximum of two units. Prerequisite: Department approval. (1 or 1/2 unit)

Pre-Algebra: A course for students who need more preparation before they begin to study algebra. (1 unit)

Algebra IA: The first year of a two-year Algebra I course. It is designed for those students who wish to take algebra but whose past experience with mathematics would indicate the need for more time for concept mastery. Prerequisite: Teacher recommendation. (1 unit)

Algebra IB: This is the second year of the two-year Algebra I course. Prerequisite: Algebra IA. (1 unit)

Algebra I: This course extends the student's understanding of number relations into the use of algebraic expressions. (1 unit)

Technical Math: This year-long course is designed for students who have completed Algebra I. An activity-oriented course, it is designed for students desiring to continue into technical or higher education. Prerequisite: Algebra I or Algebra IB. (1 unit)

Applied Geometry: This course will present geometric concepts in an informal manner with emphasis on practical application. Prerequisite: Algebra IB or Algebra I with teacher recommendation. (1 unit)

Geometry: In this course, students are introduced to a way of logical thinking with emphasis on solving problems involving geometric figures. Prerequisite: Algebra I. (1 unit)

Honors Geometry: Geometry topics will be addressed from an advanced viewpoint. Prerequisite: Algebra I and teacher recommendation. (1 unit)

Algebra II: Concepts of functions and properties of linear and quadratic relations and functions are emphasized. Proofs are used to justify properties. Radical expressions, complex numbers and exponential functions are major topics. Prerequisite: Geometry. (1 unit)

Honors Algebra II: Algebra II topics will be addressed from an advanced viewpoint. Prerequisite: Geometry and teacher recommendation. (1 unit)

Algebra III/Trigonometry: This course focuses on functions and relationships including advanced algebra topics and trigonometry. Prerequisite: Algebra II. (1 unit)

Honors Advanced Math: A study of major topics from advanced algebra, trigonometry, analytic geometry and introductory calculus is presented in a logical sequence leading to preparation for calculus. Prerequisite: Algebra II and teacher recommendation. (1 unit)

Honors Special Topics in Mathematics: This course is open to those students who have completed Advanced Math or Algebra III and are not recommended for calculus. Prerequisite: Algebra III/Trigonometry or Advanced Math. (1 unit)

Computer Mathematics I: This course serves as an introduction to computing and computer programming with an emphasis on application in areas of math. This course should not be taken in lieu of a college preparatory math class. Prerequisite: Algebra I and teacher recommendation. (1 unit)

Computer Mathematics II: Students will expand their mathematical problem-solving skills by using the PASCAL programming language to address topics in algebra and geometry. Prerequisite: Geometry and teacher recommendation. (1 unit)

AP Honors Calculus: The fundamentals of both differential and integral calculus will be studied. Students are expected to take the AP calculus exam. Prerequisite: Advanced Math and teacher recommendation. (1 unit)

countability and do not directly hold individual students accountable for what they learn. Alabama, Mississippi, North Carolina, and Texas are using end-of-course tests to help determine whether students should be promoted or as part of the final grade in selected courses. Maryland has announced that it plans to replace its current high school graduation tests with 10 more challenging tests (three in English, three in social studies, and two each in mathematics and science). These assessments will be linked to Maryland's new high school curriculum standards and will be given at the end of courses that cover the material in each area.

While end-of-course and graduation examinations tied directly to curriculum frameworks can add academic integrity to the core curriculum, one pitfall remains. If states fail to define the level of performance on these assessments that is high enough to be "good enough," the purpose of linking the assessments to the frameworks is defeated.

Georgia and Louisiana developed performance standards (passing scores) by using teacher perceptions and student performance on trial assessments. In 1993, the percentage of Louisiana students meeting the standards on their first attempt were 90 per-

cent in English language arts, 82 percent in mathematics, 90 percent in written composition, 85 percent in science and 89 percent in social studies. Yet more than half of the high school graduates who entered public colleges and universities in Louisiana enrolled in one or more remedial courses. In Georgia, about 90 percent of students taking the high school graduation tests meet the standard in language arts, 80 percent in mathematics, and 85 percent in writing. (The social studies and science examinations are not yet fully implemented). But about 30 percent of students entering public four-year colleges and 50 percent entering public two-year colleges take at least one remedial course.

Almost all high school students in Maryland pass the high school exit examinations currently in use—more than 90 percent pass the reading test when they are in the ninth grade. Some students pass the tests when they are in the 7th or 8th grade. Maryland officials predict that 50 percent of the students may fail the new assessments when they are first administered in 2001, but they expect the pass rate to increase to about 75 percent within two to three years. Students will have multiple chances to take the examinations and access to extra help to prepare for them.

What does all this tell us about high school graduation standards?

Simply requiring all students to complete 13 or more courses in the core subject areas will not guarantee that test scores will go up dramatically, that the number of students placed in remedial courses in college will be reduced substantially, or that employers will be satisfied with the skills and knowledge that high school graduates bring to entry-level jobs. What we do know is that *not* requiring challenging courses results in

mediocre test scores, high percentages of students entering college in remedial courses, and high school graduates who are unprepared for the workplace.

Core curriculum courses need to be challenging and must build on and reinforce prior learning. The course objectives must be linked to the curriculum frameworks and described clearly for teachers, students, and parents. No matter how good a curriculum framework may

be, students will not meet expectations if they do not take courses that include the knowledge and skills outlined in the framework. Finally, assessments must be used to help

gauge the quality of core courses, and passing standards must be set high enough to insure the results accurately reflect the expectations in the curriculum.

How will the public react to higher standards?

The public is unlikely to object to higher expectations for high school graduates. Results of public opinion polls and interviews tell us that most citizens understand that higher standards may discourage some students and that high school dropout rates might rise. But many think youngsters will respond to the challenge and work harder. The polls tell us that people support higher expectations and understand the risks. They think existing standards are not enforced and do not understand why.

To many people, “basic” means “proficient,” not “minimal.” When national and state leaders proposed “new basics,” higher standards and attention to quality, they were not thinking of requiring students to pass an eighth grade test to graduate from high school or a tenth grade test that 90 percent of high school seniors could pass. They imagined a core curriculum with challenging courses and demanding standards that assured all students that they were prepared for life after high school—whether in the workplace or in college. That’s still the expectation today.

What can state leaders do to ensure that high school graduation standards are good enough?

First, examine graduation requirements in your state. Are the courses required of all students challenging and demanding? Or will any math, English, science or social studies courses do?

Second, ask if the course requirements and standards for graduation are enforced and how? Must all students in all districts meet the requirements? How many do? Are there procedures for determining if students have mastered the knowledge and skills outlined in the curriculum? Is there a high school exit examination? What does it measure? How are performance levels on the tests determined? What performance levels must students meet to graduate? How do your state standards for graduation tests and end-of-course tests compare to those in

other states? Do schools use reports from colleges that tell them about how their graduates performed academically? Do schools survey employers to determine whether they are satisfied with the skills and knowledge of the graduates they employ?

There are many factors related to student achievement including family income, level of parental education, innate ability, motivation and physical health. State policies cannot have an immediate impact on family income or levels of parental education. But state policies can insure that *all* students who graduate from high school have completed courses in core subjects and that the content of those courses help prepare them for life after high school.



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