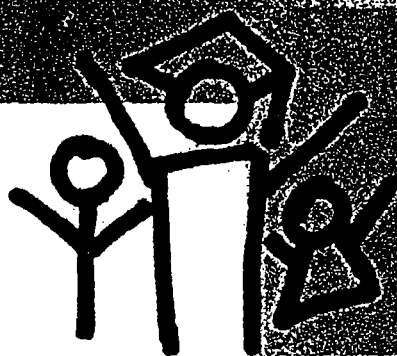




Thinking K-16

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Summer 1998

GOOD TEACHING MATTERS HOW WELL-QUALIFIED TEACHERS CAN CLOSE THE GAP

For decades, educators, educators-in-training and the public more broadly have been relentlessly fed the same message about achievement among poor and minority students: "Because of poverty and other neighborhood conditions, these students enter school behind other students. As they progress through the grades, the deficits accumulate, leaving them further and further behind other students." Their conclusion? Nothing schools do makes a very big difference.

As an organization, we have questioned the prevailing explanation for some time. "If poverty always overwhelms everything else," we ask, "what explains the 89% pass rate on the Texas state assessment by the Loma Terrace School in El Paso where almost 90% of the children are poor? Or what about the 95% fourth grade pass rate on the same exam by the entire Mission Independent

School District with a 94% poverty rate? And why, if schools really don't make a difference, are the low-income students in Community School District #2 in New York City performing so much higher now than were their counterparts a decade ago?"

Always, the response is the same. "It's that superstar principal/superintendent (choose one). We can't expect those kinds of feats from the mere mortals who lead most of our schools."

But what if that answer is wrong? What if these schools are succeeding not on the force of someone's personality, but simply by teaching students what they need to know to perform at high levels? What if, in other words, poor and minority students are performing below other students not because something is wrong with them or their families, but because most schools don't bother to teach them what they need to know?

By now, those of you who are familiar with our work know that we are absolutely convinced—by both research and extensive experience in classrooms all over the country—that poor and minority youngsters will achieve at

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Good Teaching
Matters

By
Kari Gaycock

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the same high levels as other students if they are taught at those levels. In our groundbreaking report,

Education Watch: The Education Trust National and

State Data Book, we document the clear relationship between low standards, low-level curriculum, under-educated teachers and poor results. We argue, further, that if states and school districts work hard on these three issues, they can close the achievement gap.

Most of the time, we have felt as Ron Edmonds undoubtedly felt: surrounded by researchers clinging to dog-eared copies of the Coleman Report and arguing that nothing works.

Recently, however, a number of large-scale studies provide convincing proof that what we do in education does matter. Schools—and especially teachers, it turns out—really DO make a difference. Earlier educational researchers just didn't have very good ways of measuring the variables.

If we only took the simple step of assuring that poor and minority children had highly qualified teachers, about half of the achievement gap would disappear.

We have chosen to focus this issue of *Thinking K-16* on what all of the studies conclude is the most significant factor in student achievement: the teacher. We focus here not because we think improvements in teachers' capabilities or changes in teacher assignment patterns are, by themselves, a silver bullet, but because such changes are clearly more important to increasing student achievement—especially among poor and minority students—than any other.

We focus on teacher qualifications here also because this is an issue within our power to change. If we but took the simple step of assuring that poor and minority children had teachers of the same quality as other children, about half of the achievement gap would disappear. If we went further and assigned our best teachers to the students who most need them (a step, by the way, that makes sense to most people outside of education), there's persuasive evidence to suggest that we could entirely close the gap.

Thought provoking, yes? Read on.

—Kati Haycock

We gratefully acknowledge the support of the National Science Foundation Division of Undergraduate Education, the National Association of System Heads, and the State Higher Education Executive Officers for this publication.

ABOUT THINKING K-16 AND THE EDUCATION TRUST

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The Education Trust was created to promote high academic achievement for all students at all levels, from kindergarten through college. While we know that all institutions could better serve their students, our work focuses on the schools and colleges most often left behind in efforts to improve

education, those institutions serving Latino, African American, Native American and low-income students. The Education Trust works alongside policymakers, parents, education professionals, and community and business leaders in districts across the country who are trying to transform their schools and colleges into institutions that genuinely serve all students.

Thinking K-16 is published with the intent to share lessons learned in these communities with policymakers as well as with educators and members of the public concerned with the quality of education provided our neediest young people.

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GOOD TEACHING MATTERS ... A LOT

by Kati Haycock

Director, The Education Trust

Parents have always known that it matters a lot which teachers their children get. That is why those with the time and skills to do so work very hard to assure that, by hook or by crook, their children are assigned to the best teachers. (That is also at least part of the reason why the children of less skilled parents are often left with the worst teachers, but more on that later.)

Professional educators typically reject these notions. When parents ask for their children to be assigned to a particular teacher, or to be moved out of the classroom of another, most principals counsel them not to worry. "Your child will learn what he or she needs to from any of our teachers."

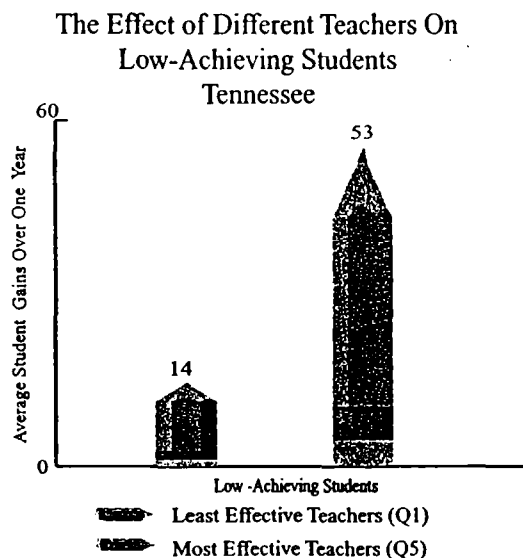
Recent research from Tennessee, Texas, Massachusetts and Alabama proves that parents have been right all along. They may not always know which teachers really are the best, but they are absolutely right in believing that their children will learn a lot from some teachers and only a little from others—even though the two teachers may be in adjacent classrooms. "The difference between a good and a bad teacher can be a full level of achievement in a single school year," says Eric Hanushek, the University of Rochester economist notorious for macroanalyses suggesting that virtually nothing seems to make a difference.¹

TEACHER EFFECTS: TENNESSEE

Tennessee is one of the few states with data systems that make it possible to tie teachers to achievement in their classrooms. Moreover, the state's value-added approach for assessing student achievement allows observers to look at the gains students make during a particular school year.

William L. Sanders, director of the Value-Added Research and Assessment Center at the University of Tennessee, Knoxville, has studied these data extensively. By grouping teachers into quintiles based on their effectiveness in producing student learning gains, his work allows us to examine the impact of teacher effectiveness on the learning of different types of students, from low- to high-achievers.

The chart adjacent shows the effect teachers from different quintile levels have on low-achieving

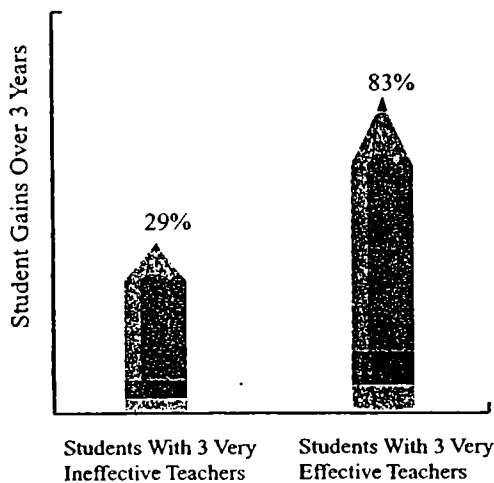


Sanders, William L. and Rivers, Joan C. "Cumulative And Residual Effects of Teachers on Future Student Academic Achievement," 1996, Table 1, p. 9.

students. On average, the least effective teachers (Q1) produce gains of about 14 percentile points during the school year. By contrast, the most effective teachers (Q5) posted gains among low-achieving students that averaged 53 percentile points.

The Tennessee data show dramatic differences for middle- and high-achieving groups of students, too.

Cumulative Effects of Teacher Sequence on Fifth Grade Math Scores: Tennessee



Sanders, William L. and Rivers, Joan C., "Cumulative And Residual Effects of Teachers on Future Student Academic Achievement," 1996, Figure 1, p.12

For example, high-achieving students gain an average of only 2 points under the direction of Q1 (least effective) teachers but an average of 25 points under the guidance of Q5 (most effective) teachers. Middle achievers gain a mere 10 points with Q1 teachers but in the mid-30s with Q5 teachers.

There is also considerable evidence that, at least in Tennessee, the effects of teachers are long-lived, whether they advance student achievement or squash it. Indeed, even two years after the fact, the performance of fifth-grade students is still affected by the quality of their third-grade teacher. The chart above shows the examples of different patterns of teacher effectiveness for one metropolitan system.

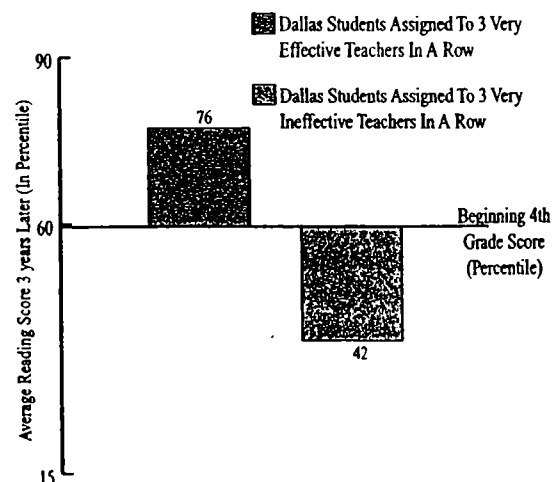
As Sanders points out, students whose initial achievement levels are comparable have "vastly different academic outcomes as a result of the sequence of teachers to which they are assigned."² Differences of this magnitude—50 percentile points—are stunning. As all of us know only too well, they can represent the difference between a "remedial" label and placement in the "accelerated" or even "gifted" track. And the difference between entry into a selective college and a lifetime at McDonald's.

TEACHER EFFECTS: DALLAS

A variety of recent studies in Texas show similar differences in achievement between students taught by teachers of differing quality. Borrowing from some of Sanders's techniques, researchers in the Dallas Independent School District recently completed their first-ever study of teacher effects on the ability of students to perform on assessments. In sharing their findings, Robert Mendro, the district's executive director of institutional research, said, "what surprised us the most was the size of the effect."³

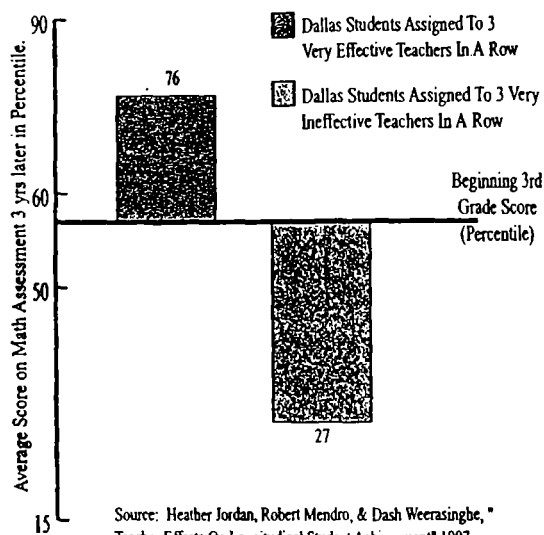
For example, the average reading scores of a group of Dallas fourth graders who were assigned to three highly effective teachers in a row rose from the 59th percentile in fourth grade to the 76th percentile by the conclusion of sixth grade. A fairly similar (but slightly higher achieving) group of students was assigned three consecutive ineffective teachers and fell from the 60th percentile in fourth grade to the 42nd percentile by the end of sixth grade. A gap of this magnitude—more than 35 percentile points—for students who started off roughly the same is hugely significant.

Effects On Students' Reading Scores In Dallas (Grades 4-6)



Source: Heather Jordan, Robert Mendro, & Dash Weerasinghe, "Teacher Effects On Longitudinal Student Achievement" 1997.

Effects On Students' Math Scores In Dallas (Grades 3-5)



The impact of teacher effectiveness is also clear in mathematics. For example, a group of beginning third-graders in Dallas who averaged around the 55th percentile in mathematics scored around the 76th percentile at the end of fifth grade after being assigned to three highly effective teachers in a row. By contrast, a slightly higher achieving group of third graders—averaging around the 57th percentile—were consecutively taught by three of the least effective teachers. By the conclusion of fifth grade, the second group's percentile ranking had fallen to 27th. This time the youngsters, who had scored nearly the same as beginning third-graders, were separated by a full 50 percentile points just three years later.

TEACHER EFFECTS: BOSTON

The Boston Public Schools are taking a serious look at factors that influence student learning, including the effectiveness of their teachers. A recently released study by Bain and Company conducted on behalf of the district shows the correlation between high school teachers and their students' academic growth in math and reading. The authors examined classrooms of BPS tenth-graders whose average scores were approximate-

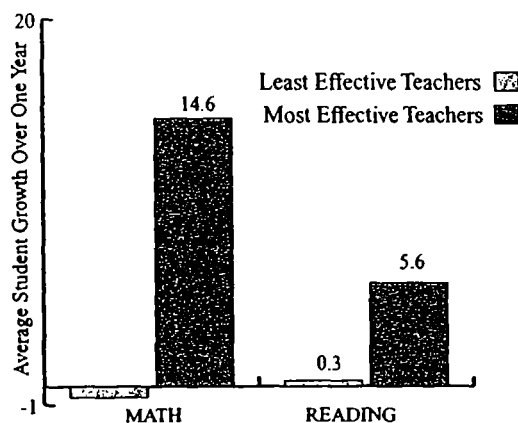
ly the same and charted their progress over the year by teacher. The differences were dramatic. In reading, they found that although the gains of students with the top third teachers were slightly below the national median for growth (5.6 on average compared to 8.0), the students with teachers from the bottom third showed virtually no growth (0.3). The math results were even more striking. The top third teachers produced gains on average that exceeded the national median (14.6 to 11.0 nationally), whereas the bottom third again showed virtually no growth (-0.6).

Altogether, this means that one-third of BPS teachers are producing six times the learning seen in the bottom third. As one frustrated headmaster put it, "About one-third of my teachers should not be teaching."

WHAT MAKES FOR TEACHER EFFECTIVENESS?

None of these studies has yet advanced to the obvious next step: identifying the qualities that make for an effective teacher. But other researchers have used Texas's extensive database on both teachers and students to examine the impact of specific teacher characteristics on student achievement. Together with work from Alabama and North Carolina, this research helps us to get underneath the matter of teacher effectiveness.

Boston Students With Effective Teachers Showed Greater Gains



Source: Boston Public Schools, "High School Restructuring," March 9, 1998.

1. Strong Verbal and Math Skills

The first thing that is clear when you look across the various studies is the critical importance of strong verbal and math skills. Harvard's Ronald F. Ferguson, for example, has looked closely at the relationship between student achievement and teacher performance

on a basic literacy examination (the Texas Examination of Current Administrators and Teachers, which was administered to all teachers and administrators in Texas in 1986). Ferguson found a significant positive relationship between teacher test scores on TECAT and student scores on the Iowa Test of Basic Skills (ITBS), with higher scoring teachers more likely to produce significant gains in student achievement than their lower scoring counterparts. Indeed, a change of one standard deviation in a district's teacher scores produced a corresponding change of .17 standard deviation in student scores, when other differences were controlled.⁴

Ferguson got similar results in an analysis of the impact of teacher and classroom qualities on student achievement scores in Alabama. As in the Texas studies, he found a strong positive relationship between teacher test scores (in this case, ACT scores) and student achievement results.⁵

2. Deep Content Knowledge

There is also considerable research showing how important teachers' content knowledge is to their effectiveness with students, especially at the middle and senior high school levels. The data are especially clear in mathematics and science where teachers with majors in the fields they teach routinely get higher student performance than teachers who did not. Goldhaber and Brewer examined this relationship using data from the National Educational Longitudinal Study of 1988 (NELS), an ongoing survey of individuals who were in eighth grade in 1988. Goldhaber and Brewer found a significant positive relationship

between teachers' degrees and students' achievement in technical subjects. They concluded that "in mathematics and science, it is the teacher subject-specific knowledge that is the important factor in determining tenth-grade achievement."⁶

The data are less clear in English and social studies; in these subjects students taught by majors don't show consistently better scores than students taught by teachers who majored in something else. However, other evidence suggests that content is no less important in these two disciplines. For example, a recent study in Hawaii asked social studies teachers to rate their own level of understanding about various historical periods and teaching methods, then compared teacher expertise to student achievement. Not surprisingly, there was an almost perfect match: students performed best in the domains where teachers indicated the most expertise.⁷

3. Teaching Skill?

All of this seems to beg the question: what about teaching knowledge and skills? Is content knowledge really sufficient for effective teaching? Clearly not. One only has to spend a few semesters in higher education to see that the deep content knowledge inherent in the Ph.D. doesn't necessarily lead to effective teaching.

That said, the large-scale studies we have reviewed are not particularly helpful in identifying ways to quantify teaching expertise. Neither education courses completed, advanced education degrees, scores on professional knowledge sections of licensure exams nor, interestingly, years of experience seem to have a clear relationship to student achievement. Perhaps the work going on at the National Board for Professional Teaching Standards or Lee Shulman's work on "pedagogical content knowledge" at the Carnegie Foundation for the Advancement of Teaching will advance our understanding of—and options for developing and measuring—teaching knowledge and skill.

In the meantime, we suggest that educational leaders not get sidetracked: there is more than sufficient evidence about the importance of deep content knowledge and strong verbal skills to serve as a foundation for immediate action. At the very least, we know

Students' test scores can mean the difference between a remedial label and the gifted track—or between entry into a selective college and a lifetime at McDonald's.

enough to call the question with faculty in the arts and sciences, who, after all, are responsible for developing both content knowledge and verbal skills among intending teachers. It is also enough to justify a second look at hiring and assignment criteria. If good teachers matter, we need to be sure that we are getting the best we can.

INEQUITIES IN DISTRIBUTION

Our emerging understanding of the critical importance of good teachers has especially profound implications for poor and minority youngsters. For no matter how quality is defined, these youngsters come up on the short end. While the teaching force in high-poverty and high-minority communities certainly includes some of the most dedicated and talented teachers in the country, the truth is that these teachers are vastly outnumbered by under- and, indeed, unqualified colleagues.

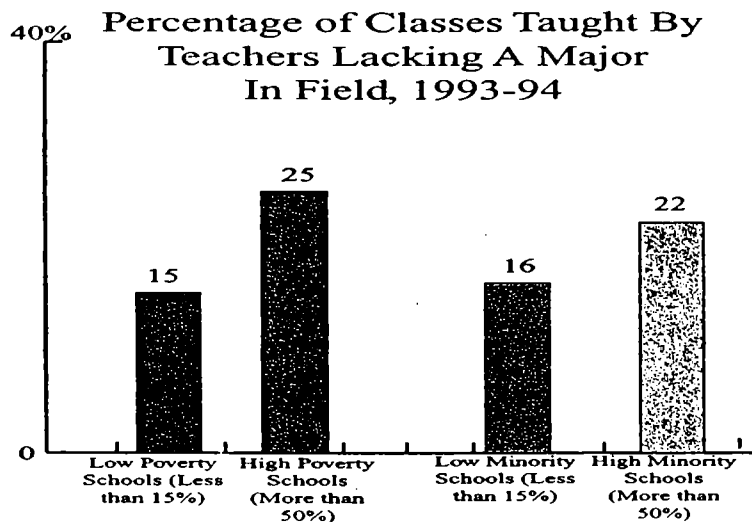
These patterns are clear in national data tabulations on out-of-field teaching specially prepared for the Education Trust earlier this year by Richard Ingersoll, a professor at the University of Georgia. As is evident in the table above (as well as in the state tabulations on pp. 8-9) minority and poor youngsters—the very youngsters who are most dependent on their teachers for content knowledge—are systematically taught by teachers with the least content knowledge.

Similar inequities show up at all grade levels in the state-level studies described above, and many more. For example, in Tennessee, black students are almost twice as likely to be taught by ineffective “Q1” teach-

ers as are white children, and are considerably less likely to be taught by the most effective teachers.

The patterns look quite similar in Texas, where, according to researchers John Kain and Kraig Singleton, African American and Latino children are far more likely to be taught by teachers who scored poorly on the TECAT examination. Indeed, as the percentage of non-white children in the school increases,

the average teacher score declines.⁸ Finding the same patterns in his analysis, Ferguson wrote that “[i]n Texas, and certainly in other places too, attracting and retaining talented people with strong skills to teach in the districts where black students are heavily represented is part of the unfinished business of equalizing educational opportunity.”⁹



Source: Richard Ingersoll, University of Georgia, Unpublished, 1998.

RACE MORE THAN CLASS?

Contrary to the assumptions that many people may make, inequities in the distribution of teacher expertise are not driven wholly by finances. If they were, we would expect that poor minority children would have teachers of about the same quality as poor white children. But such is not always the case.

In their analysis of Texas data, Kain and Singleton found disturbing differences. Poor white children, it turns out, appear to have a higher likelihood of having well qualified teachers than poor black children.¹⁰

Similar patterns are evident in teacher quality data from other states. In the chart on pages 8 and 9, for example, it is clear that students who attend predominantly minority secondary schools in Virginia are more likely to be taught by underqualified teachers than stu-

STATE INVESTMENT IN WELL-PREPARED TEACHERS

The most important educational investment a state can make is in highly qualified teachers. When teachers have both full knowledge of the subject that they teach, their students are denied the most basic learning resource. There are several ways to examine teacher quality. This chart shows one: the percentage of secondary school classes taught by teachers who have a college major in the subject area.

The chart shows, by state:

the overall percentage of classes taught by teachers who do not have a major in the subject that they teach; and the percentage of classes taught by teachers who do not have a major in the subject that they are teaching in high poverty schools and minority schools (schools in which more than 50% of the students are low income or nonwhite) or in low poverty schools (schools in which no more than 15% of the students are low income or nonwhite). In reading the chart, the reader will see a stark and troubling pattern: low-income students and students of color are less likely than other students to be taught by teachers with a college major in the subject area that they are teaching.

The data used to build this chart are drawn from the Schools and Staffing Survey, conducted by the National Center for Education Statistics (NCES) in school year 1993-1994. Richard Ingersoll of the University of Georgia conducted the analysis. While the Schools and Staffing Survey is a large-scale, nationwide study, the data are inadequate to support statistical inferences for certain kinds of schools, so we have no point estimate for the percentage of teachers with the simplest measures of normal standards, but the pattern is large and consistent and agrees with all 48 states. These samples are of the smallest size and lowest margin of error.

We have not included in the overall quality of teacher the lower and quality of teachers in high-poverty schools. We also have not included in this analysis an assignment of underqualified teachers. Disparities in poverty, for example, is the difference between the percentage of high- and low-poverty schools that are taught by underqualified teachers.

Percentage of secondary school classes taught by teachers lacking a major in field by state, 1993-1994

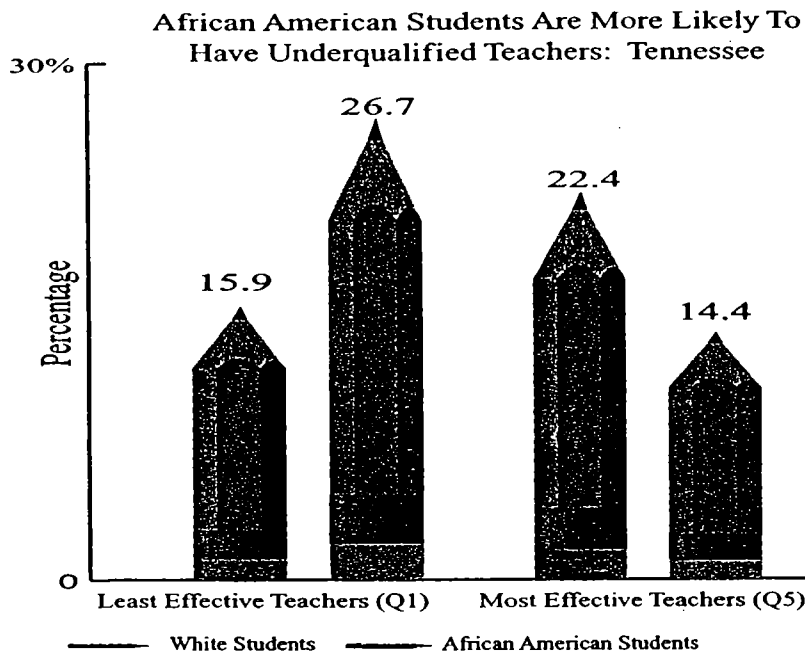
	Overall (Rank)	By School Poverty		By School Minority Population	
		Low	High (Rank)	Low	High (Rank)
Alabama	17% (21)	14%	23% (19)	17%	16% (7)
Alaska	29 (31)	20	48% (23)	2	21% (20)
Arizona	26 (49)	17	37 (31)	26	29 (13)
Arkansas	31 (38)	11	11 (6)	15	14 (16)
California	27 (50)	28	29 (6)	26 *	27 (12)
Colorado	20 (33)	17		20	24 (15)
Connecticut	13 (6)	12		12	15 (13)
Delaware	24 (43)	15		15	
D.C.	17 (21)			17	
Florida	18 (28)	22	19 (41)	22	17% (12)
Georgia	21 (36)	15	33 (29)	25	19 (3)
Hawaii	24 (43)	18		24	
Idaho	20 (33)	15		19	

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	Overall (Rank)			By School Poverty		By School Minority Population	
				Low	High (Rank)	Low	High (Rank)
Illinois	16%	(15)	13%	24%	(24)	13%	25% (25)
Indiana	11	(6)	10	15	(11)	12	26 (27)
Iowa	12	(4)	7	17	(23)	12	
Kansas	13	(12)	15			14	
Kentucky	24	(43)	20	29	(19)	24	
Louisiana	23	(40)	9	28	(30)	21	21 (10)
Maine	22	(38)	19			21	
Maryland	17	(21)				21	20 (18)
Massachusetts	16	(15)	13	28 *	(28)	15	20 (17)
Michigan	16	(21)	12	18	(10)	18	18 (14)
Minnesota	10	(1)	11	6 *	(3)	9	
Mississippi	25	(47)	2	29	(41)	25	22 (6)
Missouri	14	(8)	12	18 *	(15)	14	
Montana	16	(15)	11	35	(32)	16	21 (28)
Nebraska	14	(8)	16	8 *	(1)	14	
Nevada	15	(12)	15			16	28
New Hampshire	14	(8)	13			15	
New Jersey	20	(33)	16	25	(19)	16	21 (21)
New Mexico	22	(38)	21	24	(8)		23
New York	12	(4)	8	22	(23)	17	18 (24)
North Carolina	19	(31)	11	41	(35)	15	24 (23)
North Dakota	11	(3)	10	17	(17)	11	17 (13)
Ohio	19	(31)	16	45	(34)	16	42 (30)
Oklahoma	17	(23)	13	18	(16)	17	18 (18)
Oregon	23	(40)	18			26	
Pennsylvania	16	(15)	15	22	(12)	17	21 (26)
Rhode Island	10	(1)	13 *			10	
South Carolina	21	(40)	20	26	(41)	25	21 (15)
South Dakota	16	(15)	14	17	(8)	15	
Tennessee	25	(47)	19	30	(21)	31	18 (16)
Texas	18	(28)	19	21	(7)	19	18 (7)
Utah	16	(15)	18			16	
Vermont	17	(21)	12			16	
Virginia	21	(36)	14	20	(15)	21	24 (10)
Washington	24	(43)	23	32	(19)	24	28 (15)
West Virginia	18	(28)	22	16	(12)	17	
Wisconsin	17	(21)	16	27	(24)	18	25 * (21)
Wyoming	15	(12)	15			14	

* Interpret with caution

continued from page 7



Source: Sanders, William L. and Rivers, Joan C. "Cumulative And Residual Effects of Teachers on Future Student Academic Achievement," 1996, Table 1, p.

dents who attend high-poverty secondary schools. The same is true in Pennsylvania and Oklahoma: students in high-minority secondary schools are more likely to be taught by teachers without a college major in the subject they are teaching.

The problems in central cities are particularly acute, according to a 1995 report from the National Governors Association. "Emergency hiring, assignment of teachers outside their fields of preparation, and high turnover in underfunded schools conspire to produce a situation in which many poor and minority students are taught throughout their entire school careers by a steady stream of the least qualified and experienced teachers." ¹¹

A MORE EQUITABLE DISTRIBUTION OF TEACHER EXPERTISE

What would happen if minority and poor children had teachers of the same quality as other children? A large part of the gap would simply disappear. The estimates vary somewhat depending upon the statistical model used, but in no case is the effect minor.

- Ferguson's modeling for several metropolitan Alabama districts suggests that an increase of 1 standard deviation in the test scores of teachers who teach black children would produce a decline of about two-thirds in the black/white test score gap in that state.¹²

- Strauss's study of student achievement in North Carolina suggested that a 1% relative increase in teacher scores on the NTE would bring about a 5% relative decline in the percentage of students who fail standardized competency exams.¹³

In other words, much of what we have blamed on chil-

dren and their families for decades is actually the result of things we have done to them. As a nation, we have deprived our neediest students of the very ingredient most important to learning: a highly qualified teacher.

In his analyses of the Texas data base, Ferguson found a small number of school districts that are exceptions to the general pattern (see below chart). A look at how their youngsters benefit from a steady diet of higher performing teachers gives us a glimpse of how the national data for poor and minority students *could* look...if we had the will.

ASSURING QUALIFIED TEACHERS FOR ALL OF OUR CHILDREN

These findings have profound implications for states and communities that are striving to get vastly larger numbers of their students to high standards of achievement. If education leaders want to accomplish this goal in the near term, they are far more likely to do so if they focus, first and foremost, on quality—quality in

teacher preparation, recruitment, hiring, assignment, and ongoing professional development.

This goes doubly for schools and communities with concentrations of poor and minority children. Rather than continuing to accept the crumbs, these schools and communities must insist on the very best teachers for their children. After all, poor and minority children depend on their teachers like no others. In the hands of our best teachers, the effects of poverty and institutional racism melt away, allowing these students to soar to the same heights as young Americans from more advantaged homes. But if they remain in the hands of underqualified teachers, poor and minority students will continue to fulfill society's limited expectations of them.

What, then, are the elements of a strategy to assure highly qualified teachers for all young Americans?

We don't yet have all the answers. But we know enough to start the conversations. Here are the more powerful ideas we have gleaned from our work with leading states and cities:

1. Standards for entry into the profession.

A number of states are raising the standards for entry into the profession. Virginia, for example, has raised both course requirements in the arts and sciences and cut scores on the Praxis examinations for aspiring teachers.

Massachusetts has devised new and much more rigorous examinations, especially in the content areas.

While these attempts are commendable, it is also important to make sure that the measures for teacher content knowledge are solid and aligned with K-12 standards.

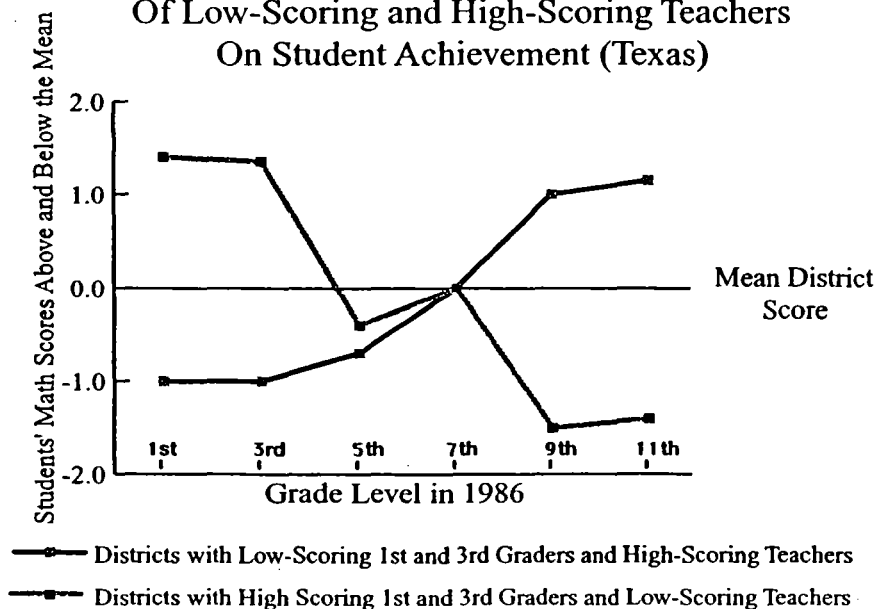
Preliminary information suggests that existing examinations may be too low: an analysis of a widely used test for prospective high school physics teachers, for example, featured content that one reviewer described as "appropriate for a rigorous ninth-grade physical science course." If this is correct, these tests are wholly insufficient either to assure adequate content knowledge of individual teachers or to use for accountability purposes with arts and sciences departments.

Any discussion about raising entry standards for teachers should include an examination of how well the standards align with the K-12 content candidates will have to teach, and the assessments used to find out if candidates can teach this content.

2. Accountability measures for colleges and universities that prepare teachers.

In Texas, for example, colleges that have pass rates below 70% (soon to be 75%) on the state's teacher licensure exam will lose the right to prepare teachers. To be sure that its intentions are understood, the legislature spells out precisely what it means: 70% of the

Long-Range Effects
Of Low-Scoring and High-Scoring Teachers
On Student Achievement (Texas)



Source: Ronald F. Ferguson, "Evidence That Schools Can Narrow the Black-White Test Score Gap," 1997.

white graduates, 70% of the Latino graduates, 70% of the black graduates and so on. Not a single group can be left behind. Moreover, if aspiring math teachers,

for example, cannot pass the exam, then the math department loses the franchise. Other states are heading in this direction, as well. Universities, together with their nearby school districts, could take the lead from such state-level actions: decide on what intending teachers need to know in their subjects and hold academic departments accountable for getting them there before they graduate.

3. Professional development for existing teachers.

Teacher effectiveness is not forever fixed. Through careful development, teachers can build their effectiveness over time. In Community School District #2 in New York City, Superintendent Tony Alvarado has invested generously in the professional development of his principals and teachers. Focusing initially on reading, and then moving to mathematics, Alvarado made sure his teachers, in particular, got lots of on-site coaching from experts. As a result, student achievement has climbed steadily over the past 10 years. University of Michigan researcher David Cohen's recent study of professional development in California also shows its impact on student achievement when professional development focuses on new curricula and the content that undergirds it.¹⁴ Similar results are evident in broad achievement gains in the three El Paso school districts, where more than 50 full-time teacher-coaches provide in-school assistance to teachers as they strive to improve student achievement.

These successful strategies differ in important ways from many professional development programs and initiatives. Far from the three-hour workshop about isolated topics, these strategies are ongoing, on-site and focused on the content that students should learn.

4. Assurance that poor and minority children have teachers that are at least as qualified as the ones that teach other students.

Actually, if we had our druthers, we would push for a policy requiring that, for the next two decades or so, these students should systematically be assigned our best teachers. Achieving either goal, though, would require careful attention to:

- Just who we are preparing to teach—where they come from and where they want to teach, in particular;
- Interdistrict differences in salaries for beginning and mid-career teachers;
- The practice of concentrating beginning teachers in school buildings with concentrations of poor children;
- District policies—often gained through collective bargaining—that reward senior teachers with the “right” to transfer to “easier” schools;
- Practices within schools, where teachers fight over who has to teach whom, with the senior, better educated teachers often winding up with the most advanced children; and
- The absence of clear incentives and prevalence of disincentives for teachers to work with poor and minority children.

These practices have been around for so long that they seem beyond change. But some school districts are beginning to make headway on rooting out these inequities. In San Antonio, for example, new policies on teacher assignment have begun to balance the distribution of teachers within the district. In other districts, special targeting of more highly compensated “mentor” positions is beginning to even out teacher expertise. Energetic principals can also reverse the normal pattern. For example, in the Los Angeles unified School District, where uncertified and out-of-field teachers are the norm, Principal Lupe Simpson of the all-minority Nimitz Middle School has a mathematics department full of fully certified, mathematics majors. How? By working her contacts with local universities.

If education leaders want to close the achievement gap, they must focus, first and foremost, on developing qualified teachers.

5. "Parent Right to Know" policies.

Parents deserve to know when their children are being taught science by history majors or history by physical education grads. To be sure, this knowledge has been available to some, mostly affluent parents through their community grapevines. But nowhere has there been a systematic way of letting all parents know that their child's teacher has enough background in the subject to teach it so their students will understand it. When parents know where the needs are greatest, they can become partners in local efforts to secure an adequate number of well-qualified teachers for all their students.

6. Recruitment and rewards to attract the best into teaching.

We worry that, instead of seeking out the very best, too many teacher preparation programs simply make do with what walks in the door. That's not good, because SAT and other data suggest that the high school seniors who aspire to become teachers are among the least able of all prospective college students. It's also not good for communities with concentrations of minority and poor students because few of those who aspire to become teachers either grew up in or want to teach in such communities.

Many leaders in teacher preparation programs say that they're doing the best they can—that low salaries and lower prestige make it impossible to attract able candidates, especially minorities, to the teaching profession and higher standards will make it worse. We remain unconvinced. If these claims are correct, then why does Teach for America, which has far higher standards than most education schools, routinely attract far more qualified graduates than it can place? And why, among Teach for America's way-above-average corps members, are there more than twice as many minorities as there are in education schools?¹⁵ The same would appear to be true for alternate certification programs that cater to young or mid-career professionals from other fields: no lack of smart or minority applicants.

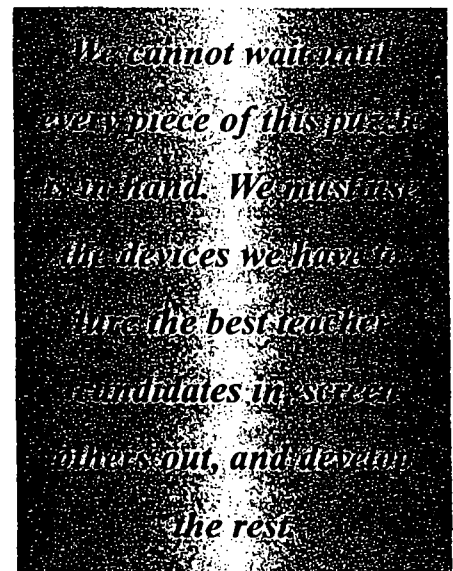
These experiences and others tell us that we can produce the highly qualified teachers that we need by combining:

- High entry standards;
- Rich incentives like generous scholarships and loan forgiveness for highly able professionals who want to teach in high-poverty schools;
- Accountability systems that reward departments and campuses for the numbers of their top students that enter teaching; and
- Non-traditional, yet still rigorous, routes into the profession.

These are just some of the pieces of a solution to the vexing problem of assuring that we have teachers to match our goals. Solving this problem requires concerted action from policymakers, leaders in both K-12 and higher education, teacher unions, and parents. No single party can win the battle alone. All must be involved and at the table if we are to craft sound policies that will succeed.

But we must also understand that we cannot wait until every piece of this puzzle is in hand. Our inability to answer every question about teacher effectiveness right now shouldn't make us reluctant to use the devices we do have to begin to lure the best in, screen others out, and intensively develop the rest. And it certainly shouldn't deter us from doing what it takes to

assure that poor and minority youngsters get at least their fair share of effective, well-prepared teachers.



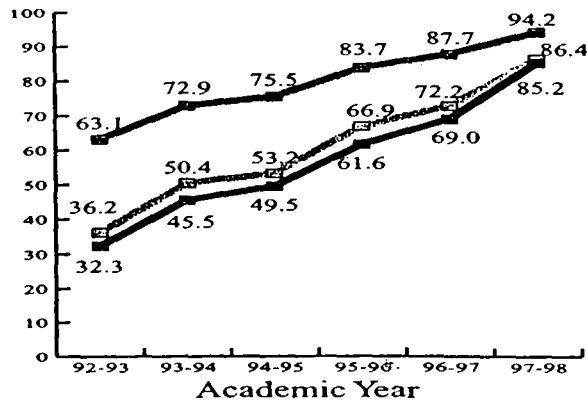
El Paso Closing the Gap

In 1992, leaders at the University of Texas-El Paso and the three El Paso-area school districts—El Paso, Ysleta, and Socorro—came together to create the El Paso Collaborative, a comprehensive effort to raise student achievement kindergarten through college. Their goal was to prepare every young person in this highly impoverished border city to be able to enter college without remediation, and the El Paso Standards they set reflected that goal.

Over the next five years, they focused hard on what matters most: excellent teaching. Through the Collaborative, El Paso teachers received intensive assistance in improving instruction, including summer institutes and regular on-site coaching, funded through a combination of NSF dollars and a redirection of federal and state funds. Meanwhile, leaders at the University made major changes in the way they were preparing teachers, to make sure that such teachers were fully prepared to teach to the El Paso standards.

The results of their hard work are clear in the data above: improved achievement and a narrower gap between groups. This is a refreshing change from the national picture of flat achievement and a widening gap between groups. Investing in teachers really does pay dividends!

% Of Students Passing TAAS Math By Ethnicity - Combined 3-8 & 10



The El Paso Collaborative for Academic Excellence, 1998.

NOTES:

1. Eric A. Hanushek. "The Trade-Off Between Child Quantity and Quality," *Journal of Political Economy*, 1992
2. William I. Sanders and June C. Rivers. "Cumulative and Residual Effects of Teachers on Future Students Academic Achievement," 1998, p. 9
3. Jeff Archer. "Students' Fortune Rests With Assigned Teacher," *Education Week*, Washington, DC, February 18, 1998.
4. Ronald F. Ferguson. "Evidence That Schools Can Narrow the Black-White Test Score Gap," 1997, p. 32
5. Ronald F. Ferguson and Helen F. Ladd. "How and Why Money Matters: An Analysis of Alabama Schools," in *Holding Schools Accountable: Performance Based Reform in Education*, Brookings Institute: Washington, DC, 1996
6. Dan D. Goldhaber and Dominic J. Brewer, "Evaluating the Effect of Teacher Degree Level on Educational Performance," in *Developments in School Finance*, 1996, p. 199
7. Eva L. Baker, "Report on the Content Area Performance Assessments (CAPA): A Collaboration

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8. John F. Kain and Kraig Singleton. "Equality of Educational Opportunity Revisited," *New England Economic Review*, May/June 1996, p. 109
9. Ferguson, "Evidence That Schools Can Narrow the Black-White Test Score Gap," p. 30
10. Kain and Singleton, p. 109
11. Linda Darling-Hammond, "The Role of Teacher Expertise and Experience in Students' Opportunity to Learn," in *Strategies for Linking School Finance and Students' Opportunity to Learn*, National Governors Association, Washington DC: 1996
13. Ferguson and Ladd, p. 278
14. Robert P. Strauss and Elizabeth A. Sawyer. "Some New Evidence on Teacher and Student Competencies," *Economics of Education Review*, 1986, p.41
15. David K. Cohen and Heather C. Hill. "State Policy and Classroom Performance," *CPRE Policy Briefs*, January 1998
16. Teach for America, 1997 Annual Report, New York NY

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1998



ADVANCED PLACEMENT

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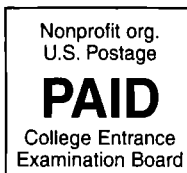


The College Board

Educational Excellence for All Students



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Chronicle of Higher Education (Academe Today)
May 31, 2000 Category: Trade

Gov. Bush of Texas Signs Pact to Resolve Complaints Over Deficiencies at Black Colleges

By PATRICK HEALY

Gov. George W. Bush of Texas has promised the U.S. **Department of Education** that he will resolve civil-rights complaints against the state by improving two historically black colleges there and beefing up programs to recruit and retain black and Hispanic students.

Mr. Bush, the presumptive Republican nominee for the presidency, signed an agreement with the department this month committing Texas to creating high-demand academic programs at the public black colleges, Prairie View A&M University and Texas Southern University. The pact also calls for new facilities and for beautification efforts to make the colleges look as nice as their predominantly white peer institutions.

And while affirmative action in college admissions has been banned by a federal court's order in Texas, the agreement calls for the state to enhance race-based recruitment and retention programs to ensure that more black and Hispanic students earn college degrees.

Some lawyers and education officials in Texas have said that the court order, which is known as the Hopwood decision, prohibits race-targeted recruitment efforts as well. But last summer, Texas Attorney General John Cornyn issued a legal opinion saying that the court order dealt only with admissions policy, although he cautioned campuses against once more offering race-based scholarships as recruitment tools.

Raymond C. Pierce, deputy assistant secretary for civil rights at the **Education Department** and a chief negotiator of the Texas pact, reiterated Tuesday that Hopwood did not apply

to the state's recruitment and retention efforts. The details of those efforts -- and whether they would include race-based financial aid -- are still to be worked out.

"There is no current official guidance or policy of the State of Texas that disallows affirmative action in recruitment and retention, to my knowledge," Mr. Pierce said.

This month's agreement does not include costs or timetables. But the price tag, especially for the new programs and wide-scale refurbishments, will probably be high. State higher-education officials proposed some steps in April that they and lawyers in the Education Department's Office for Civil Rights will flesh out over the next several months, with the goal of putting a final plan before the Texas Higher Education Coordinating Board in October. If the plan is approved, Governor Bush has given his word that he will press the Legislature in 2001 to finance the proposals.

The agreement comes after three years of negotiations and fact-finding trips that the civil-rights office undertook to evaluate college desegregation in Texas. Since 1994, department officials have announced desegregation-compliance reviews in seven states -- Florida, Kentucky, Maryland, Ohio, Pennsylvania, Texas, and Virginia -- that were accused decades ago of having segregated public systems of higher education yet were never formally cleared.

By signing the agreement, Governor Bush did not acknowledge that Texas had ever had a problem with desegregation. Rather, the accord was worded in such a way to focus on improving educational options and campuses that draw many Texas minority students.

"I want all Texans to have an opportunity to enjoy the benefits of our state's higher-education system," Governor Bush said in a written statement.

Mr. Pierce, of the civil-rights office, said the agreement in Texas and those in Florida, Kentucky, Ohio, and Pennsylvania represented a "success story" for the Education Department and the states involved. The department is still working with Maryland and Virginia to resolve complaints there.

As for Texas specifically, he said that the governor's staff was cooperative, and that Mr. Bush was not dead-set against any issues or proposals that the O.C.R. had raised. Asked about Mr. Bush's take on the accord, Mr. Pierce said, "He

signed the agreement."

"Our experience in Texas for the most part was similar to what we found in the other states: identifying common ground for our particular interests -- our interest being outstanding federal civil-rights violations -- and providing quality educational experiences for all citizens," Mr. Pierce said.

Clay Johnson, the governor's chief of staff, could not be reached for comment Tuesday.

RESEARCH ON THE VALUE OF DIVERSITY/DESEGREGATION IN K-12 AND HIGHER EDUCATION

Introduction: Race-based affirmative action in K-12 and higher education will likely be upheld only where there is a sufficient *basis in evidence* to support the belief that the given program serves a compelling interest and is narrowly tailored to achieve that interest. The evidentiary requirement likely serves the related purposes of demonstrating that the use of race is necessary to promote the articulated compelling interest and ensuring that the articulated interest is not a pretext for discrimination.

The justifications for affirmative action in both K-12 and higher education flow from the mission of each institution and can include the non-remedial interest(s) in promoting the educational benefits that flow from learning in diverse/desegregated environments. These interests include the interest in promoting the educational benefits that accrue to all students from interacting in diverse schools, colleges, or universities (which raises research questions 1-5 below). They also include the related interest in promoting desegregated schools to improve educational opportunity and, thereby, achievement, especially for disadvantaged minority students (which raises research question 6 below). To justify the use of race based on these non-remedial interests, it is important to collect and promote research linking racial diversity/desegregation to the educational benefits it is strongly believed to promote.

The table that follows lists some of the existing research on the questions identified below. This is not intended to be an exhaustive list of relevant research or an endorsement of particular studies over others. Rather, this is an evolving bibliography that lists relevant research.

Research Questions: The key research questions regarding the educational benefits of diversity/desegregation include:

1. **Teaching and Learning** - Can racially diverse environments improve student learning, including students' understanding of substantive issues and/or students' critical thinking/problem solving skills?
2. **Civic Values** - Can racially diverse environments enhance students' civic/democratic values, including students' racial attitudes and/or inter-group relations?
3. **Employment** - Can racially diverse environments promote students' preparation for employment, including students' understanding of the value of diverse perspectives and/or ability to function effectively in diverse business environments?
4. **Critical Mass** - What level of diversity is necessary or optimal to promote each of the educational benefits listed above?
5. **Policies and Programs** - What campus efforts are necessary or optimal to promote the educational benefits of diversity listed above?
6. **Opportunity and Achievement** - Can racially desegregated environments promote educational opportunity and achievement, especially with regard to disadvantaged minority students?

Types of Evidence: Several types of research may provide both direct and indirect evidence of the educational benefits of diversity. These include, but are not limited to, (1) opinion evidence (e.g., testimony from education leaders and survey evidence from students and educators on the benefits of diversity), (2) outcome evidence (e.g., studies showing positive educational outcomes from learning in diverse environments), and (3) programmatic evidence (e.g., success stories of what works and what institutions are doing to promote the benefits of diversity).

Summary of Research Evidence:

Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
1. Adams, Maurianne & Marchesani, Linda	<i>Curricular Innovations: Social Diversity as Course Content</i> , New Directions for Teaching 85 (Winter 1992)	1992		X	X	X					Anecdotal evidence of how racial and ethnic diversity promotes learning and challenges long-held perspectives.
2. Adams, Maurianne & Zhou-McGovern, Yu-Hui	<i>The Sociomoral Development of Undergraduates in a "Social Diversity" Course: Developmental Theory, Research and Instructional Applications</i> , paper presented at the Annual Meeting of the American Research Association, New Orleans, LA (Apr. 1994) (ERIC Report No. 380345)	1994		X	X						Case study and pretest/posttest study. Study found statistically significant positive effects on cognitive development for both minority and non-minority college students participating in a social diversity course with a diverse student body.
3. Alger, Jonathan R.	<i>The Educational Value of Diversity</i> , 83 Academe 20 (Jan./Feb. 1997)	1997		X	X						Article discusses the misconceptions of diversity, discussing some of the research. Author concludes that diversity does not foster an exchange of group perspectives, but rather a multitude of individual perspectives. Each individual has a unique perspective and the range of these perspectives will be broader- and the educational experience of all students correspondingly richer- if individuals with diverse backgrounds are included in the student body.

¹ 1) Teaching and Learning 2) Civic Values 3) Employment 4) Critical Mass 5) Policies and Programs 6) Opportunity and Achievement

Research on the Value of Diversity/Desegregation in K-12 and Higher Education/ DRAFT/October 31, 2000

Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
4. American Association of University Professors & American Council on Education	<i>Does Diversity Make a Difference? Three Research Studies on Diversity in College Classrooms.</i> http://www.aaup.org/divrep.pdf	2000		X	X				X		Analyses of data from college faculty member questionnaires. Concludes that diversity plays role in increasing cognitive learning, complex thinking and personal development because it challenges stereotypes, broadens perspectives and sharpens critical thinking skills. Study also discusses the elements necessary to realize this benefit.
5. Appel, Morgan; Cartwright, David; Smith, Daryl G. & Wolf, Lisa E.	<i>The Impact of Diversity on Students: A Preliminary Review of the Research Literature.</i> Association of American Colleges and Universities	1996		X	X	X			X		Review of research literature on diversity. Review concludes that diversity changes racial attitudes, improves cognitive development and academic success. Also includes information on what type of programs colleges should implement.
6. Astin, Alexander W.	<i>What Matters in College? Four Critical Years Revisited.</i> San Francisco: Jossey-Bass	1993		X	X	X			X		Study examining the effects of environmental variables on student personality, attitudes, values, beliefs, academic and cognitive development, and career development. The weight of empirical evidence finds that the actual effects on student development of emphasizing diversity and of student participation in diversity activities are overwhelmingly positive.

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Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
7. Astin, Alexander W.	<i>Diversity and Multiculturalism on the Campus: How are Students Affected?</i> , Change 44 (Mar./Apr. 1993)	1993		X	X	X			X		Analysis of student survey data from 217 institutions. Examines how racial diversity on college campuses affects student attitudes and development. Concludes that emphasizing diversity and providing opportunities for student participation in diversity activities are all associated with widespread beneficial effects on a student's cognitive and affective development.
8. Bok, Derek & Bowen, William G.	<i>The Shape of the River: Long-Term Consequences of Considering Race in College and University Admissions</i> . Princeton, New Jersey: Princeton University Press	1998		X		X	X	X			Study of academic records and questionnaires of 60,000 students at 28 selective colleges and institutions. Study shows that diversity, including racial diversity, in higher education significantly enhances the educational benefits for all students.
9. Braddock, II, Jomills Henry	<i>The Perpetuation of Segregation Across Levels of Education: A Behavioral Assessment of the Contact Hypothesis</i> , 53 Sociology of Educ. 178 (1980)	1980	X			X	X				Correlation study of 253 African-American students who attend predominately African-American or predominately white colleges in Florida. Results indicate that African-Americans who attend college and who graduated from desegregated high schools are much more likely to attend a predominantly white college than their counterparts who graduated from segregated high schools. Results suggest school desegregation breaks down the self-perpetuating cycle of racial segregation.

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Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
10. Braddock, II, Jomills Henry & Dawkins, Marvin P.	<i>The Continuing Significance of Desegregation: School Racial Composition and African American Inclusion in American Society</i> . 63 J. of Negro Educ. 394 (No. 3, 1994)	1994	X			X	X			X	Descriptive article that provides an overview of studies. Examines the long-term effects of school desegregation on integration in college, employment, community, and friendships. Concludes that the research is clear and consistent that there are long-term benefits to school desegregation in facilitating African-American inclusion in American life.
11. Braddock, II, Jomills Henry & McPartland, James	<i>Social-Psychological Processes that Perpetuate Racial Segregation: The Relationship Between School and Employment Desegregation</i> . 19 J. of Black Studies 267 (No. 3, 1989)	1989	X	X		X	X				Causal comparative study examining how school desegregation affected a national African-American youth cohort in employment desegregation and work relationships. Study suggests that early desegregated experiences create a different attitudinal basis among African-Americans that, in part, produces or sustains desegregation in adult life.
12. Braddock, II, Jomills Henry & McPartland, James	<i>The Social and Academic Consequences of School Desegregation</i> . Equity and Choice 5 (Feb. 1988)	1988	X			X	X			X	Descriptive article outlining the effects of school desegregation on college desegregation, employment desegregation, minority career attainment, and non-classroom activities. Concludes that students who graduate from racially mixed schools often are better prepared for adult roles and will encounter fairer career opportunities and less segregation in their adult lives.

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Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
13. Braddock, II, Jomills Henry; Crain, Robert L. & McPartland, James	<i>A Long-Term View of School Desegregation: Some Recent Studies of Graduates as Adults</i> , Phi Delta Kappan 259 (Dec. 1984)	1984	X	X		X	X			X	Provides an overview of several studies on school desegregation. Studies show that white and African-American students who attend desegregated schools are more likely as adults to attend diverse colleges, live in integrated neighborhoods, work in diverse firms, and have friends from another racial group.
14. Braddock, II, Jomills Henry; Dawkins, Marvin P. & Trent, William	<i>Why Desegregate? The Effects of School Desegregation on Adult Occupational Desegregation of African Americans, Whites and Hispanics</i> , 31 Int'l J. of Contemporary Sociology 273, (No. 2, 1994)	1994	X				X				Study of multiple regression analyses based on three independent surveys to assess the relative importance of school desegregation in predicting employment desegregation. African-Americans, whites, and Hispanics who attend desegregated high schools are more likely to work in desegregated job settings.
15. Carnevale, Anthony P.	Campus Diversity and the New Economy (draft paper presented at ACE conference on Achieving Inclusion and Equity in Higher Education, Jan. 14-16, 1999)	1999	X	X	X	X	X	X	X		Article examines workforce statistics, the new global economy, and research on projected college enrollments. Concludes that a diverse workforce yields economic as well as social benefits to the U.S., supporting the need for increased diversity at colleges through some form of affirmative action as well as other alternatives to increase minority enrollments.
16. Case Note	<i>An Evidentiary Framework for Diversity as a Compelling Interest in Higher Education</i> , 109 Harv. L. Rev. 1357	1996		X	X	X	X				Article discusses the findings of several studies demonstrating that campus diversity positively affects educational outcomes.

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17. Chang, Mitchell	<i>Racial Diversity in Higher Education: Does a Racially Mixed Student Population Affect Educational Outcomes?</i> , Ph.D. Dissertation, Univ. of Cal., Los Angeles	1996		X	X	X					Study of student data quantified by degree of racial diversity or opportunity for cross-racial interaction. Finds that diversity has positive impacts on students' overall college satisfaction, graduation rates, grade point average, intellectual self-concept and social self-concept.
18. Chang, Mitchell, Hakuta, Kenji, Jones, James, & Witt, Daria	<i>Compelling Interest: Examining the Evidence on Racial Dynamics in Higher Education</i> . The American Educational Research Association and the Stanford University Center for Comparative Studies in Race and Ethnicity	1999		X		X			X		Study concludes that racially diverse environments, when properly utilized, lead to quantitative as well as qualitative gains (otherwise unattainable in homogeneous environments) in educational outcomes for all parties.
19. Cox, Taylor, Jr.	<i>Cultural Diversity in Organizations: Theory, Research and Practice</i>	1993		X	X		X	X			Study involving small groups. Finds that exposure to racial diversity measurably improves cognitive ability, and that members of heterogeneous groups typically devise more creative solutions to problems than members of homogeneous groups.
20. Edison, Marcia; Hagedorn, Linda Serra; Nora, Amaury & Terenzini, Patrick T.	<i>Influences on Students' Openness to Diversity and Challenge in the First Year of College</i> , 67 Journal of Higher Education 174 (Vol. 2, Mar./Apr. 1996)	1996		X		X			X		Correlation study that examines several different factors in measuring the influence and openness to diversity on college campuses. Identifies ways in which institutions can engender in students a greater openness to diversity.

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Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
21. Eurich-Fulcer, Rebecca & Schofield, Janet W.	<i>When and How School Desegregation Improves Intergroup Relations: The Relationship Between Social Psychology and Social Policy</i> (Draft paper)	1999	X			X		X	X		Descriptive article discussing past social psychological research on desegregation and inter-group relations. Highlights how this research has influenced the field, describes its limitations, and suggests the usefulness of the research for present day social policy.
22. Gurin, Patricia	<i>The Compelling Need for Diversity in Higher Education</i> (expert report prepared for University of Michigan litigation)	1999		X	X	X	X	X	X		Report describing research outlining the theoretical foundations for the effect of diversity. Study of University of Michigan and nationwide data reveals far-ranging benefits to all students from a racially and ethnically diverse student body, including growth in active thinking processes, increased engagement and motivation, augmented intellectual skills and post-graduation valuation of intellectual skills; and "democracy outcomes."

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Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
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23. Hallinan, Maureen T.	<i>Diversity Effects on Student Outcomes: Social Science Evidence</i> , 59 Ohio St. L.J. 733 (1998)	1998	X	X	X	X			X	X	Descriptive article outlining social science evidence. For K-12 students, desegregation benefits minority students who attend majority white schools. African-American and white students in desegregated schools are less racially prejudiced than those in segregated schools. For college students, diversity promotes learning, increases understanding of racial groups and cultures, reduces racism and prejudice, and leads to cordial relationships of students of different racial and ethnic heritage. The positive effects of diversity are conditioned on institutional support and promotion of diversity and multiculturalism.
24. Hallinan, Maureen T. & Smith, Stevens S.	<i>The Effects of Classroom Racial Composition on Students' Interracial Friendliness</i> , 48 Soc. Psychol. Q. 3 (1985)	1985	X			X			X		Correlation study demonstrating that desegregated classrooms increase interracial friendliness, particularly in early years, supporting the "opportunity theory." Concludes that integrated classrooms maximize interracial friendliness. Also finds no support for the theory that students who are in the racial minority in a desegregated classroom will isolate themselves because of social threat, low power or low status.
25. Hallinan, Maureen T. & Teixeira, Ruy A.	<i>Opportunities and Constraints: Black-White Differences in the Formation of Interracial Friendships</i> , 58 Child Dev. 1358 (1987)	1987	X			X			X		Causal-comparative study examining the effect of classroom climate (including organization of instruction and racial composition) on students' cross-race friendliness in desegregated classrooms.

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Author(s)	Title/Citation	Date	K-12	H Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
26. Hawley, Willis D.; Banks, James A.; Padilla, Amado M.; Pope-Davis, Donald B. & Schofield, Janet Ward	<i>Strategies for Reducing Racial Prejudice: Essential Principles for Program Design</i> . Toward a Common Destiny 423 (W.D. Hawley & A.W. Jackson eds., 1995)	1995	X	X		X			X		Descriptive article suggesting design principles for educators to use when creating strategies to improve inter-group relations and reduce discrimination.
27. Hurtado, Sylvia	<i>Linking Diversity and Educational Purpose: How the Diversity of the Faculty and Student Body May Impact the Classroom Environment and Student Development</i> (paper presented at Harvard Civil Rights Project Conference on Diversity and Higher Education, May 9, 1997)	1997		X	X	X					A study of higher education diversity involving 159 colleges. Study found that those who studied with someone of another race or were satisfied with the faculty diversity reported greater growth not only in racial and cultural tolerance, but also in leadership, critical thinking skills, ability to work cooperatively and problem solving skills.
28. Hurtado, Sylvia	<i>The Institutional Climate for Talented Latino Students</i> , 35 Research in Higher Education 21 (No. 1, 1994)	1994		X				X	X		Study which examines the notion of a necessary critical mass versus a statistical percentage of minority students on campus. Concludes that campus administrators and faculty play an important role in making students feel valued. Suggests that understanding Latino students' experiences is the first step in developing successful intervention strategies that may improve student outcomes.

¹ 1) Teaching and Learning 2) Civic Values 3) Employment 4) Critical Mass 5) Policies and Programs 6) Opportunity and Achievement

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Author(s)	Title/Citation	Date	K-12	H-Ed	Research Questions ¹						Description
					1	2	3	4	5	6	
29. Kurlaender, Michal & Yun, John T.	<i>Is Diversity a Compelling Educational Interest? Evidence from Metropolitan Louisville</i> , Harvard Civil Rights Project. http://www.law.harvard.edu/civilrights/publications/louisville.html	2000	X		X	X	X				Analysis of student survey data regarding experiences in diverse classrooms. Study finds that both African-American and white students attending high school in Louisville, Kentucky report benefiting greatly from the diversity of their schools. They report strong educational benefits to diversity in improved critical thinking skills, future educational goals, and principles of citizenship.
30. Lopez, G.E.	<i>The Effect of Group Contact and Curriculum on White, Asian American, and African American Students' Attitudes</i> . Ph.D. dissertation, University of Michigan. (Abstract in Dissertation Abstracts International 54 (07): 3900B)	1993		X		X					Longitudinal survey of University of Michigan students. Changes in attitudes resulted from a course in diversity, and inter-group contact resulted in attitude changes for white students, with mixed results among African Americans.
31. Mathtech, Inc.	<i>The Outcomes of Diversity in Higher Education</i> . Mid-Year Report, prepared for Office of Educational Research and Improvement	1998		X	X	X	X	X	X		Report examining research literature and surveys. Review of research finds positive effects of racial diversity on student cognitive growth, interaction in the diverse work environment, and breaking down racial stereotypes. Also discusses the type of programs used to foster diversity and retain minority students on campus. Also suggests other areas that need further research.

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32. McLeod, Poppy Laretta; Lobel, Sharon Alisa & Cox. Taylor H., Jr.	<i>Ethnic Diversity and Creativity in Small Group</i> , 27 Small Group Res. 248 (May 1996)	1996		X			X	X			Experimental study involving college and graduate students. Shows that racially diverse work teams have potential performance advantages in idea generation and solution quality. Also emphasizes proper management of diversity over simply increasing it, since there is some evidence suggesting that heterogeneous groups have experienced negative results when the variety of perspectives were not utilized.
33. Milem, Jeffery	<i>College, Students and Racial Understanding</i> , 29 Thought and Action 51 (1994)	1994		X		X			X		Study examining Cooperative Institutional Research Program's annual survey of college students. Concludes that white students' commitment to promoting racial understanding was increased by increased by discussing racial/ethnic issues, socializing with other-race students, enrolling in ethnic studies courses and attending racial awareness workshops.
34. Milem, Jeffery	<i>The Educational Benefits of Diversity: Evidence from Multiple Sectors</i>	Draft		X	X	X	X				Multidisciplinary analysis of research literature and examination of studies. Examines the educational benefits of diversity to individuals, institutions and society. Educational benefits of diversity include enhanced critical thinking ability, problem-solving abilities and higher levels of creativity and innovation.

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35. Oickle, E. & Slavin, R.E.	<i>Effects of Cooperative Learning Teams on Student Achievement and Race Relations. Treatment by Race Interactions</i> , 54 Sociology of Educ. 174 (1981)	1981	X		X					X	Study involving 10 integrated middle school classes and 230 students, which shows that cooperative learning in diverse class is positively related to achievement and interracial friendship.
36. Orfield, Gary & Whitla, Dean	<i>Diversity & Legal Education: Student Experiences in Leading Law Schools</i> . The Civil Rights Project. Harvard Univ. ed. Aug. 1999	1999		X	X	X			X		Analysis of law student surveys at 7 institutions. Data indicates that there are educational benefits of racial diversity to all students, spelling out how and in what settings students experience different educational outcomes. The study also explores the differences among students—the experiences of those who believe diversity has a negative influence as well as the large majority who see important gains.
37. Schofield, Janet Ward	<i>School Desegregation and Intergroup Relations: A Review of the Literature</i> . Review of Research in Education 335 (G. Grant ed., 1991)	1991	X			X			X		Provides a historical overview of research on the effects of desegregation on inter-group relations. Discusses what is known and what needs to be studied.
38. Schofield, Janet Ward	<i>Review of Research on School Desegregation's Impact on Elementary and Secondary School Students</i> . Handbook of Research on Multicultural Education 597 (James A. Banks ed., 1995)	1995	X	X	X	X	X			X	Provides an overview of the social science evidence, both positive and negative, behind the value of desegregation in K-12 education and gives a critique of the methodology used by the reviewed studies. Research suggests desegregation has a positive effect on reading skills of African-American students and that school desegregation can break the segregation cycle and affect adult outcomes.

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39. Slavin, Robert E.	<i>When Does Cooperative Learning Increase Student Achievement?</i> , 94 Psychological Bulletin 429 (1983)	1983	X		X				X	X	Field study of cooperative learning. This controlled experiment demonstrates that group rewards and individual accountability are essential to the instrumental effectiveness of cooperative learning.
40. Slavin, Robert E.	<i>Cooperative Learning and Intergroup Relations</i> , Handbook of Research on Multicultural Education 628 (James A. Banks ed., 1995)	1995	X		X	X			X	X	Provides an overview of studies showing that cooperative learning in diverse K-12 schools can improve racial attitudes among all students (including increased friendships, close friendships, and friendships beyond learning group) and academic achievement (for all students).
41. Slavin, Robert E.	<i>Effects of Biracial Learning Teams on Cross-Racial Friendships</i> , 71 Journal of Educational Psychology 381 (No. 3, 1979)	1979	X			X			X		Controlled study that tested the effects of multiracial learning teams on interracial friendships. Through experiments, results show that cooperative learning in biracial teams had a positive effect on interracial friendships and that the effects were sustained over time and extended beyond the learning groups.
42. Smith, D. and Associates	<i>Diversity Works: The Emerging Picture of How Students Benefit</i>	1997		X	X	X			X		Descriptive compilation of the research and literature on racial diversity's impact on students, focusing on literature published since 1992 and on higher education.
43. Sonleitner, Nancy & Woods, Peter B.	<i>The Effect of Childhood Interracial Contact on Adult Antiracial Prejudice</i> , 20 Int'l J. of Intercultural Rel. 1	1996	X			X					Case study of Oklahoma City adults. Results show that increased child cross-racial interaction disconfirms negative racial stereotypes and has positive, long-term effect of decreasing whites' prejudice toward African-Americans, even controlling for other factors.

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44. Trent, William	<i>Outcomes of School Desegregation: Findings from Longitudinal Research</i> , 66 J. of Negro Educ. 255 (No. 3, 1997)	1997	X				X			X	Examination of national longitudinal survey data from three major studies, the author concludes that high concentrations of school poverty have strong negative consequences for the educational attainment of both African-American and white students. Concludes that school desegregation has long-term economic and educational benefits for minority students and enhances the likelihood of diversity in the workforce for both African-Americans and whites.
45. Villalpando, Octavio	<i>Comparing the Effects of Multiculturalism and Diversity on Minority and White Students' Satisfaction with College</i> . Paper presented at the Association for the Study of Higher Education, Tuscon, Arizona (ERIC Report No. 375721)	1994		X	X	X					Longitudinal study of the positive effects of diversity on students' college experience. Finds that socializing with other-race students and discussing racial/ethnic issues positively impacts students' academic and personal development.
46. Wells, Amy Stuart & Crain, Robert L.	<i>Perpetuation Theory and the Long-Term Effects of School Desegregation</i> , 64 Rev. of Educ. Res. 531 (Winter 1994)	1994	X		X	X				X	Provides an overview of 21 studies on the long-term benefits of school desegregation to African-American students. Concludes that interracial contact in elementary and secondary school can help African-Americans overcome perpetual segregation through including increased and more accurate aspirations, increased higher education attainment, and increased occupational attainment.

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