Why Some Schools With Latino Children

BEATTHEODDS

...and Others Don't

CENTER FOR THE
FUTURE OF ARIZONA

MORRISON INSTITUTE
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ARIZONA STATE UNIVERSITY

Acknowledgments

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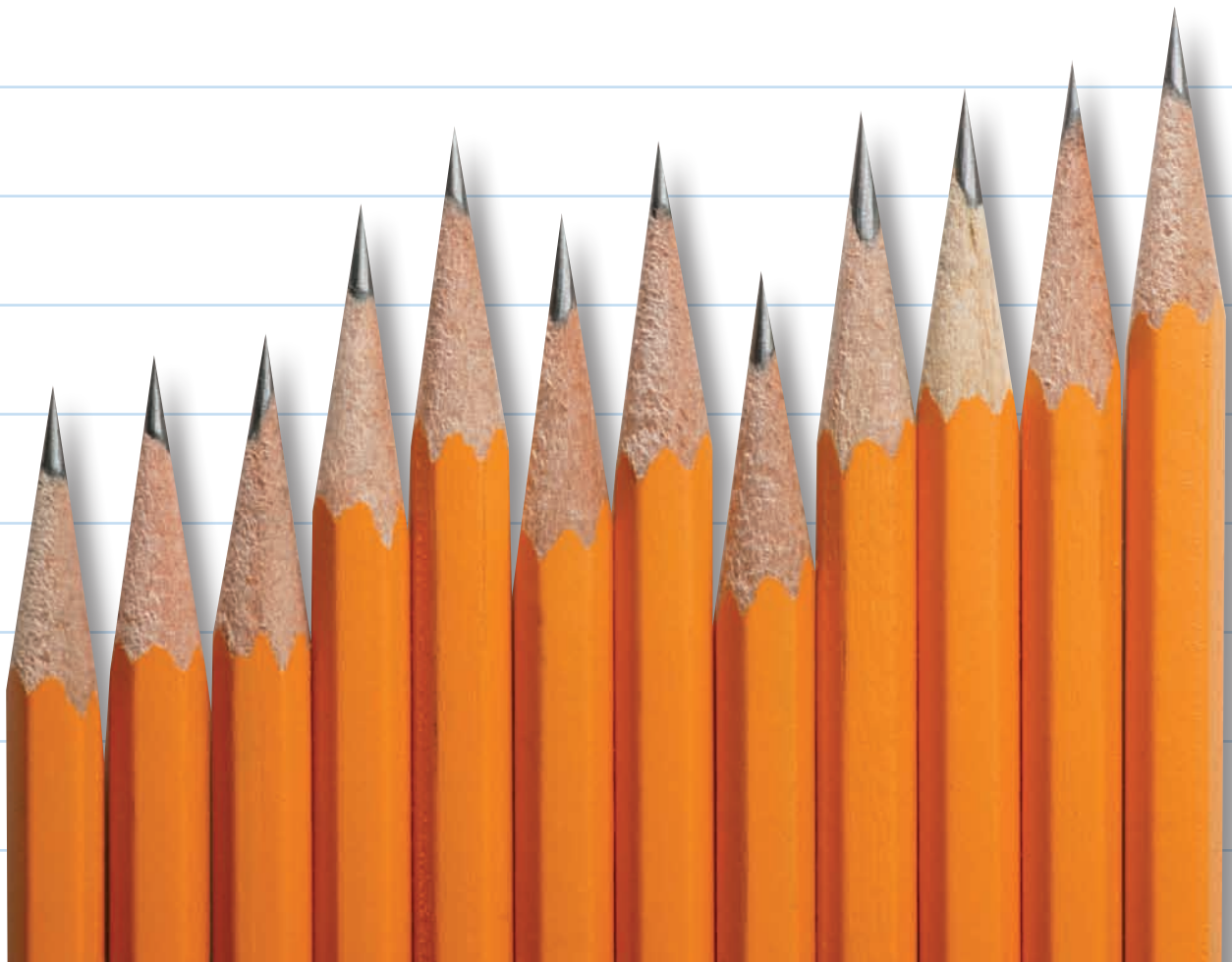
Latinos by the Numbers in Arizona

25
The percentage of population made up of Latinos

38
The percentage of Latinos under 18

37
The percentage of Latinos born outside the United States – 93 percent from Mexico

74
The percentage of Latinos speaking Spanish at home

49
Of those speaking Spanish at home, the percentage that do not speak English "very well"

25
The percentage of Latinos living in poverty

53
The percentage of the immigrants from Latin America who arrived in the United States between 1990-2000

53
The percentage of Latinos age 25 or older that completed high school

8
The percentage of Latinos age 25 or older that completed college

37
The percentage of Latinos born in Arizona who are NOT high school graduates

68
The percentage of Latinos born in Mexico who are NOT high school graduates

27
The percentage of Arizona's K-12 schools with more than half of their students from Latino families

Source: 2000 US Census; Arizona Department of Education database. Numbers are rounded.

EVERYBODY AGREES
Education is essential for the future of Arizona.

EVERYBODY AGREES
Many schools in Arizona just don't work for Latino children.

EVERYBODY AGREES
This problem needs to be fixed – now!

NOBODY AGREES
On how to do it. But that could change.

Steps forward – and solutions – are right here among Arizona's public schools.

It's true that, throughout Arizona and the Southwest, the odds are against high achievement in schools with a mostly Latino, mostly poor student enrollment. And, indeed, most schools with such demographics do have a hard time. But some such schools "beat the odds" and achieve consistently high results or show steady gains.

Why do these schools succeed where others fail? What is the DNA of a successful "beat-the-odds" school? And can the components of success be replicated elsewhere, in schools which so far have fallen victim to the odds?

Using the inspiration – and the methodology – of business guru, Jim Collins, author of the best-selling book, *Good to Great: Why Some Companies Make the Leap ... and Others Don't*, we found 12 elementary and middle schools in Arizona – schools whose students are mostly Latino and mostly poor – that are "beating the odds" on reading and math scores. And, as Collins did with successful companies, we compared them with similar schools – also with students who are mostly Latino and poor, sometimes even in the same school district – that are performing poorly.

Our comparisons yielded many insights, a number of them contrary to conventional wisdom, but one key result is the unearthing of six elements of success, which we preview in this introductory section.

We also found that these elements of success translate into broader messages for education policy and strategy.

We found that successful schools do things very differently than unsuccessful schools. The six keys to success were usually present in the beat-the-odds schools but not in the comparison schools.

We found that the things that successful schools do are common practices for any effective organization. This is not to say it's easy to adopt and maintain these practices. But leaps in performance are neither miraculous nor accidental. They are the result of clear direction and hard work.

And finally, we found that the magic is within the school itself. Successful schools focus on improving the things they actually can control that will make a big difference in student achievement. In focusing on internal improvements, these schools neither looked to external factors such as new policies or new requirements as "magic bullets," nor blamed factors such as demographics and economic status of the student population.

In his monograph *Good to Great and the Social Sectors* – a supplement to *Good to Great* that deals specifically with issues associated with education, nonprofits, and other non-business enterprises – Jim Collins frames his findings in *Good to Great* around three basic ideas:

Disciplined Thought
Disciplined People
Disciplined Action

As we unearthed the six things that the beat-the-odds schools do, we realized that they fall into these three categories.

Disciplined Thought

Clear Bottom Line

The beat-the-odds schools emphasize the achievement of every student in every classroom and take responsibility for that performance. They move past big-picture metrics like achievement per school and focus, instead, on achievement per classroom, achievement per teacher, and achievement per student. This approach unmasks poor performance and forces everyone at the school to take responsibility for student performance.

Ongoing Assessment

Most schools track results only through test scores on mandated tests and graduation rates – which typically come at the end of the year, when it's too late to turn around bad outcomes. The beat-the-odds schools dig deeper, examining a full range of information and tracking student performance data on a monthly, weekly, or even daily basis to stay on top of each student's performance. This information is used not only by school administrators but also by classroom teachers, helping them monitor student and teacher performance constantly and make adjustments in programs and teaching as needed.

Disciplined People

The Strong and Steady Principal

Principals help schools succeed not when they are flashy superstars, but when they stay focused on student success. They manage the school improvement process by being neither too rigid nor too flexible – and do so largely with what they have. They make no excuses for their school's zip code, ambivalent parents, or their inability to replace teachers. They keep pushing ahead, no matter what the roadblocks.

Collaborative Solutions

The beat-the-odds schools accomplish something that most organizations struggle with: they create effective work teams comprised of people with a wide spectrum of talents who not only tackle projects together, but also engage in real teamwork. Top management is deeply and personally involved in school reform. But responsibility for school improvement is distributed among teachers and staff – who are given real ownership and then "buy in" to the idea of candidly identifying problems and actively solving them.

Disciplined Action

Stick with the Program

No single education program or approach is a "magic bullet." The key is the commitment and breadth with which the program is implemented. In most cases, any number of programs could succeed. The successful schools pick a proven program that the teachers can embrace and stick with it over time. But, "sticking with it" doesn't mean blindly doing the same thing over and over. Instead, it means using class and student performance data to assess students and teachers on a regular basis and make changes to the program as required.

Built to Suit

The successful schools did not aim simply to meet state academic standards or even implement the district's improvement plan. Rather, they sought to meet those standards and more by placing a relentless focus on individual performance – a vital cycle of instruction, assessment, and intervention, followed by more instruction, assessment, and intervention. Over time, this leads to an educational program tailored to each student, to help maximize his or her success.

HOW
WE
DID IT

Phase I: The search for outstanding schools

Phase II: The search for common drivers of success

Five shoes, one business guru, one question, two criteria – and 12 schools.

That is, in a nutshell, the method behind – and the result of – the search for high-performing schools.

Five Shoes

2001 was the seed year. That was the year the Morrison Institute for Public Policy released its landmark report, *Five Shoes Waiting to Drop on Arizona's Future*, which identified one "shoe" as a huge hole in Arizona's educational system – the lack of educational success of Latinos. The report reminded Arizonans that Latinos are fast becoming the majority in public schools and that they suffer from low achievement gains and graduation rates. The report also reminded Arizonans that education is the key to prosperity – for individuals, for families and for the State of Arizona as a whole. Without a successful turn around in Latino education, Arizona simply will not make a successful transition to the 21st Century economy.

The implications of this problem really hit home when Mary Jo Waits, the principal author of the *Five Shoes* report, was speaking at a conference with members of Kentucky's Council on Higher Education. Another speaker, Kentucky's leading demographer, pointed to a map of the United States and said, "The Southwest will be the Appalachian region of the 21st Century." Why?

Because, he said, "Demography is destiny."

Latinos are the fastest-growing population group in the Southwest; they will soon make up a majority of public school students; and, as with Appalachian residents in the past, they have chronically low levels of educational achievement – something that has hurt the economic competitiveness of states in the Appalachian region for decades.

Waits responded to the demographer's "prognosis" for the Southwest by pointing out that it assumes that Southwestern states like Arizona and California won't get their education acts together, fixing the barriers to better educational outcomes for Latino children. The demographer's response: "Like I said, the Southwest will be the Appalachian region of the 21st Century." That led Waits and the other researchers to ask: Can schools ever be fixed? Can Arizonans ever agree on what it takes to fix Latino schools – and do it?

Our research demonstrates that the Kentucky commentator was wrong – demography does not have to be destiny. Public schools can be fixed in a way that reverses the existing trend in Latino educational attainment.

New to the field, Mary Jo Waits, Rebecca Gau, Heather Campbell, Ellen Jacobs, and Tom Rex started looking for answers and found a lot of argument about what it takes for high performance. The laundry list was long – more parental involvement, more funding, better teachers, higher pay, lower class size, and on and on. Most of these educational bromides seemed to assume that more money is the key to higher educational attainment – and it may be true that more resources can help. But after Waits and Lattie Coor, Chairman and CEO, Center for the Future of Arizona, happened to read the business book *Good to Great* – a book that concluded that business success wasn't due to innovative programs, higher executive compensation, and other management bromides – they wondered whether *Good to Great's* method might provide a way to answer the question of how to improve Latino educational attainment in Arizona.

Jim Collins knows a thing or two about discovering the keys to high performance. His 1994 book, *Built to Last*, with co-author Jerry Porras, showed how great companies triumph over time and how long-term sustained performance can be engineered into the DNA of an enterprise from the very beginning. He followed up *Built to Last* with *Good to Great*, released in 2001 after five years of research into this question: Can a good company become a great company? How?

Collins' answer was yes, and the formula involved such concepts as flywheels, hedgehogs, the Stockdale principle, and other essentials. By all accounts, *Good to Great* raised the bar for researchers and advice-givers in the business world. In *Good to Great*, Collins dispelled a lot of myths about success. But his real breakthrough has as much to do with his research methods as it does with his results.

Most research studies that seek to identify "best practices" go about this task in a surprisingly simple way: They find what the experts think are the "success stories" and try to identify what makes them successful. This approach has value, but, especially in education, it begs a few basic but important questions. The first has to do with standards: Successful relative to what? Most studies don't provide such a comparison. And the second has to do with natural advantages: How do you control for some pre-existing advantage, such as current market share in business or high socioeconomic status in education?

In *Good to Great*, Collins and his research team took a different approach that sought to address these questions and identify the components of business success in a more rigorous, yet subtle and nuanced, way.

Instead of relying on conventional wisdom about successful companies, Collins systemically analyzed 1,435 publicly-traded companies over a 30-year period to find those that had made a transition from good to great. Eventually, he identified 11 companies that had mediocre financial performance for a long time, then underwent a period of transition, shot upward, and far surpassed the market and their competitors consistently for many years.

And, instead of simply analyzing these companies, Collins used comparison companies to tease out lessons about what was really *different* about the successful companies. He found 11 other companies – one comparison for each good-to-great company – that were similarly situated in the same industries but did not shoot upward in financial performance. He also found six companies that did shoot upward in a fashion similar to the good-to-great companies but were unable to sustain a high level of financial performance over a long period of time.

From this methodology – identifying good-to-great companies and identifying their matched comparison companies – Collins laid the foundation for identifying concepts that can help not just businesses, but all organizations transform themselves from good to great.

In approaching the question of why some mostly Latino schools beat the odds, we adopted a similar methodology. The idea was not just to identify successful schools and present case studies. The idea was to identify successful *poor, Latino* schools, compare them to similar but less successful poor, Latino schools, and try to understand what sets the two groups apart.

In order to adapt the good-to-great method to Latino education in Arizona, Lattie Coor contacted Jim Collins, told him about our project and asked his advice. Collins saw great value in this project and agreed to advise us.

One Question

The research question was simple:

What does it take to get great results in educational achievement in a school with a student enrollment that is mostly Latino, mostly poor, and has many students who are still learning English?

The question may have been simple, but answering the question required a lot of hard, rigorous work, broken down into five steps, over two years. The steps were:

– Select criteria to use to identify which mostly Latino schools have either made steady gains or made significant leaps in student performance over a long period of time.

– Identify Arizona schools that meet the study's criteria in both academic achievement and demographics.

– Identify comparison schools: Arizona schools that have similar demographics and similar situations but are *not* achieving high academic standards. To make the comparison more rigorous, when possible, choose comparison schools that were actually doing better at the beginning of the period studied.

– Survey and interview key school administrators and teachers to identify and catalogue what appears to "work" and see what patterns and threads are similar – and different.

– Contrast high-achieving schools to the comparisons – and ask "What's different?" By comparing the performing schools to the comparison schools, it is possible to identify practices for any school set on improving Latino educational attainment.

Two Criteria

Success in education these days is measured by test scores. So the statistical measurement of success must inevitably involve test scores as well. Jim Collins advised us to take a long view of success and look at school performance over at least a ten-year period. Lest we select successful schools that had a random jump in achievement, we should not be looking for schools that made a one-year jump or two-year jump in particular test scores, but did not sustain gains over time.

In *Good to Great*, Collins had the advantage of 30+ years of stock market data. In Arizona, the best we could do was to use an eight-year period (1997-2004) for which we had consistent data on Stanford 9 test results.[1] And, as our research team debated the question, it became clear to us that the important thing to examine was not *all* test scores or just any test scores, but

rather, *specific* test scores that best reflect critical junctures of learning.

Thus, after an extensive review of the literature, we concluded that the best measures of student achievement are Stanford 9 test results in:

> Third-grade reading and
> Eighth-grade math

Both these tests capture student achievement at critical points in a student's academic career – reading at the end of the lower elementary grades and math at the end of middle school. Before third grade, students are learning to read, but after third grade, they are reading to learn. Research indicates that reading capability at the end of a student's third grade is a crucial predictor of future success. For science and engineering, eighth-grade math is the similar crucial juncture. Furthermore, it was possible to

transform the Stanford 9 test scores from the widely reported percentile ranks into Normal Curve Equivalency (NCE) scores, which can be accurately averaged over classrooms and schools.

In addition, we devised a "beat-the-odds" measure of performance. Is a school doing better than one might expect or predict given the school's ethnic and socioeconomic makeup?

To get this metric, we calculated the predicted results for each school through a regression equation that used 2004 student data for all schools in Arizona for which we had data, controlling for Latino population, other minority population, students on the Free and Reduced-Price Lunch Program (a proxy for poverty), student mobility and primary language.[2]

We did this for two reasons. First, to directly address the claim that demography is destiny. And second, to make sure that we didn't unwittingly select, as a beat-the-odds school, a school whose odds (demographics) were simply getting better over time.

This was not easy to do for several reasons, including incompatible databases, as well as the fact that prior to 2000 some schools administered Stanford 9 to non-English speakers in Spanish. However, given Arizona Department of Education assistance allowing us access to all the raw data available from the testing, our research team was able to recalculate critical pieces of data, including test scores by school and ethnicities, regardless of language proficiency.[3]

The next step was to identify the schools with high Latino enrollment and apply the criteria. On advice from Collins, we approached this as a series of "cuts." The first cut was easy: Identifying those mostly Latino public schools in Arizona with fully available test-score data from 1997-2004. (Private schools were not included because their data are not a matter of public record.) Arizona has 1,709 public schools.[4] Of these, we had complete, eight-year data for 906 schools that had third or eighth grades. Of these 906 schools, 331 – or 37 percent – had a Latino school enrollment of 50 percent or more, along with 50 percent or more poor children, in October of 2004.

These 331 schools were then analyzed for their Stanford 9 performance (actual and predicted percentage), focusing on third-grade reading and eighth-grade math.

At this point, two patterns of performance emerged. These were:

- Schools that showed consistently strong performance – which we called steady performers, and

- Schools that showed steady improvement in performance over time – which we called steady climbers

We did not find schools that followed the good-to-great pattern – that is, schools with mediocre performance, punctuated by a *dramatic leap*, followed by great performance sustained over a long period of time. In part, this may be because of the relatively short period (eight years) covered by data.

We continued to analyze the two different types of schools that emerged from our analysis. We used a process with increasingly tighter screens to find our beat-the-odds schools.

Steady performers were defined as schools whose Stanford 9 scores between 1997 and 2004 for either third-grade reading or eighth-grade math were consistently above the statewide average *and* consistently above what one might expect or predict, given the schools' ethnic and socioeconomic makeup.

Of the 331 schools, three passed this screen – including one school that was counted twice because it passed the screen for both third-grade reading and eighth-grade math. Thus, three schools were identified as steady performers.

Steady climbers were put through a four-cut process that included the following:

– A Stanford 9 score for either third-grade reading or eighth-grade math that increased by at least 9.5 points between 1997 and 2004. Of the 331 schools, 67 met this criterion.

– A stable performance pattern between 1997 and 2004. Even if schools showed an increase of 9.5 points or more for the eight-year period, they were screened out if the sum of annual declines (in the years the scores went down) exceeded ten points. Of the 67 schools, 31 were screened out in this way, leaving 36 candidates.

– A performance pattern that exceeded what one might expect or predict, given the school's ethnic and socioeconomic makeup. All schools whose actual scores exceeded predicted scores by 3.0 points or more in 2004 were retained. Of the 36 remaining candidates, this screen eliminated 20 schools, leaving 16.

– A sustainable performance pattern in a school where the testing did not contain any "red flags." All schools were eliminated if the 9.5 points or greater gain occurred in just one year and not sustained; if the gains in Stanford 9 appeared to be related to reductions in the percent of students tested; and if most of the school's improvement occurred in a year or years when a high percentage of tests were classified as "invalid" – that is, students were taking the test with special-education accommodations such as sight- or hearing-related assistance. We kept scores in, and considered them "valid" if students received assistance related to language, like having tests read in English, or having the testing time limit extended.[5]

This final cut eliminated seven more schools, leaving nine steady climbers along with the three steady performers.[6]

Twelve Beat-the-Odds Schools

The end result of this elimination process was 12 schools that showed either steady performance or steady improvement in the key measures between 1997 and 2004.[7] These represented a wide variety of locations and school types throughout Arizona. Some were from Phoenix; some from Tucson; one was from Yuma, and others were from small towns. Their academic compositions varied widely. For third-grade reading, schools were K-5 or K-6 schools, but for eighth-grade math, not only middle schools but also K-8 and 4-8 schools were represented.

School	Geography	Grades Served
Third-Grade Reading – Improving		
Alice Byrne	Small Metropolitan Area – Yuma	K-6
Clawson	Small City – Douglas	K-5
John F. Kennedy	Small Town – Superior	K-6
Orange Grove	Small Town/Small Metropolitan Area – Somerton/Yuma	K-5
Eighth-Grade Math – Improving		
Estrella	Large Metropolitan Area – Phoenix	7-8
Granada East	Large Metropolitan Area – Phoenix	4-8
Larry C. Kennedy	Large Metropolitan Area – Phoenix	K-8
Sierra Middle	Medium Metropolitan Area – Tucson	6-8
Wade Carpenter	Small City – Nogales	6-8
Consistently Strong		
Fairbanks (for third-grade reading)	Small Town – Morenci	K-6
Gallego Basic (for third-grade reading)	Medium Metropolitan Area – Tucson	K-5
Phoenix Magnet Traditional (for third-grade reading and eighth-grade math)	Large Metropolitan Area – Phoenix	K-8

Comparison schools, surveys, interviews – and six elements.
That is the method behind – and the results of – the search for drivers of success.

Comparison Schools

A critical component of the *Good to Great* methodology is the identification of matched pairs – comparison organizations that are similar. Jim Collins and his research team identified one "comparison company" for each good-to-great company – that is, a company that was similarly situated in a similar industry and, therefore, faced a virtually identical set of challenges, but did *not* make the leap from good to great.

We used the same general method by selecting one comparison school for each beat-the-odds school. The process for selecting comparison schools was a weighted five-step process that yielded one potential comparison school for all but one of the beat-the-odds schools and, in most cases, a backup school as well.[8]

The five criteria for selecting matching comparison schools were

– Location of schools (the same district as the steady performer or steady climber school when available, otherwise the same city or region)

– The similar grade-level enrollment in both 1997 and 2004 – a factor that controls size and growth of the school

– Similar demographics to the beat-the-odds school in both 1997 and 2004, as reflected in a combination of percent Latino students, percent Spanish speakers at home, and percent of students in poverty

– The change in the Stanford 9 performance over time had to reflect a different pattern than that of the beat-the-odds school

– The comparison's actual test performance had to be no better than its predicted test performance – such a school is not beating the odds.

In much the same way as in *Good to Great*, the selection of the beat-the-odds schools and the comparison schools created a set of what statisticians call "matched pairs" – schools that are alike in most ways, yet different in the performance measurements we were interested in. In a way, these can be thought of as twins raised by different families; how are they the same, and how are they different? The differences let us know what is different about what the schools are *doing* rather than about the school's demographic predictors.

These differences can be seen in the chart on the following page, showing one of the beat-the-odds schools (Alice Byrne Elementary in Yuma with its comparison school, another school in the same district). Third-grade classes in these two schools are very similar, although the comparison school's class has a higher percentage of students in poverty. The graph shows how each school performed on its test scores and compares the beat-the-odds schools' scores with those predicted by our regression equation.

In 1997, both schools started with roughly the same Stanford 9 scores, with the comparison actually doing a bit better.* By the end, the comparison school was doing basically the same, while Alice Byrne had risen about 20 percentage points. In addition, in 1997, the third-grade Stanford 9 reading scores for both schools were quite a bit below (10-15 percentage points) the scores predicted by our regression model. Over the following eight school years, the comparison school scores stayed below the prediction. But the Alice Byrne scores rose steadily, reaching 10 percentage points above the predicted test scores by 2004.

This type of comparison – two very similar schools in the same district, but with increasingly divergent test scores over time – provides a nearly perfect situation in which to examine the factors that cause one school to succeed where the other does not. Without the matched pairs, one might accidentally infer that a specific behavior was the key, not knowing that otherwise similar – but unsuccessful – schools also engage in that particular behavior.

*Unlike in *Good to Great*, which identified the comparison companies, we have chosen not to identify the comparison schools in this report. Most comparison schools were very willing to share their time with us, making the rigor of this analysis possible, and we are grateful.

Third-Grade Reading Stanford 9 Scores – Steady Climber

Alice Byrne Elementary School
Gains 20 points to surpass state average

	Alice Bryne	Comparison School
City	Yuma	
District	Yuma ESD	
School % Latino (1997)	39	42
School % Latino (2004)	60	59
School % FRPL (1997)*	50	66
School % FRPL (2004)	52	81
School % Spanish Speakers	37	42
School Enrollment	250	392
Third-Grade Enrollment	47	96
Change in Stanford 9 (1997-2004)	20.2	(1.1)
Actual-Predicted Stanford 9 (2004)	9.7	(8.1)
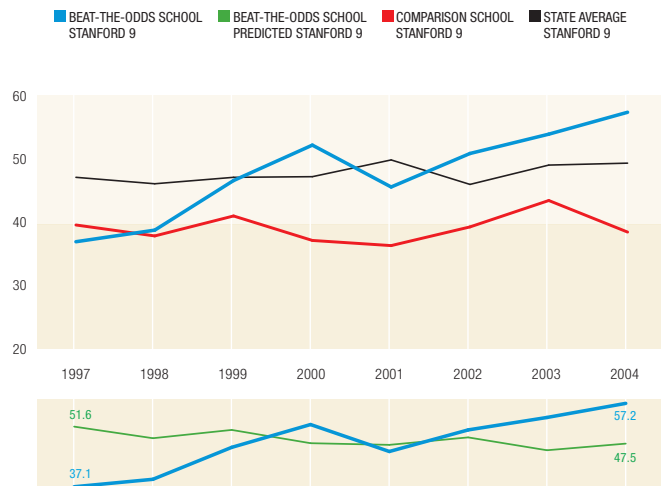
BEAT-THE-ODDS SCHOOL STANFORD 9 | BEAT-THE-ODDS SCHOOL PREDICTED STANFORD 9 | COMPARISON SCHOOL STANFORD 9 | STATE AVERAGE STANFORD 9

*FRPL is the percent of students eligible for the Free and Reduced-Price Lunch Program (a proxy for poverty).

Surveys and Interviews

In trying to isolate the differences between the beat-the-odds schools and the comparison schools, we undertook an intensive, qualitative process of gathering and analyzing information about those schools. For both sets of schools, we conducted personal interviews and surveys of administrators and teachers. We also examined their report cards. We asked a consistent set of questions, the most important one being

> During the years 1997-2004 student performance in your school began an upward shift that has since been sustained. What do you see as the top five factors that contributed to or caused that upward shift in performance?

Of course, we were familiar with many of the standard hypotheses as to what matters for high-quality student performance. Some of those factors, such as the education level of the parents, are not controllable by schools, while some, such as what educational method to use, may be. Our goal was to focus on things that the school itself could do, and we did not want to steer our interviewees toward any hypotheses. Instead, we would ask the schools to tell us what they were doing, and find where there were differences between the beat-the-odds schools and the comparison schools.

After creating a mini-dossier on each matched pair of schools, we created a matrix of answers, isolating the key themes that emerged from our research on each pair. Then we found the themes among the beat-the-odds schools that were consistent and that were different from the comparison schools. This provided the basis for our findings in the next section.

Graphs and tables for the other beat-the-odds schools and comparisons follow on pages 18-21.

BEAT-THE-ODDS SCHOOL STANFORD 9 | BEAT-THE-ODDS SCHOOL PREDICTED STANFORD 9 | COMPARISON SCHOOL STANFORD 9 | STATE AVERAGE STANFORD 9

Third-Grade Reading Stanford 9 Scores – Steady Climbers

Clawson School
Moves from 11 points lower to nearly even with state average

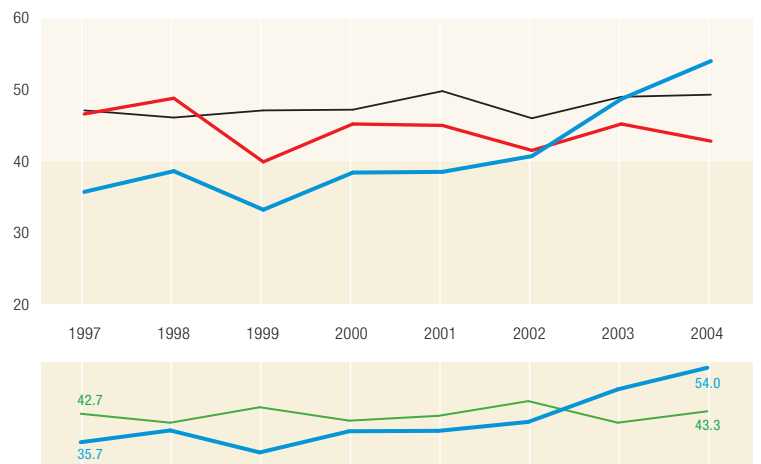|	Clawson	Comparison School
City	Douglas	
District	Douglas USD	
School % Latino (1997)	85	83
School % Latino (2004)	95	96
School % FRPL (1997)*	76	73
School % FRPL (2004)	84	79
School % Spanish Speakers	68	68
School Enrollment	273	222
Third-Grade Enrollment	65	31
Change in Stanford 9 (1997-2004)	12.0	(2.3)
Actual-Predicted Stanford 9 (2004)	9.5	(6.2)
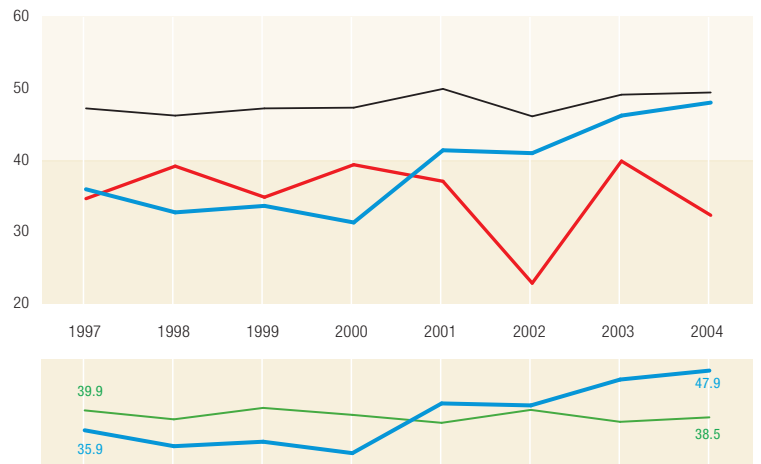
John F. Kennedy School
Moves from 11 points lower to five points higher than state average

	John F. Kennedy	Comparison School
City	Superior	
District	Superior USD	
School % Latino (1997)	76	51
School % Latino (2004)	72	61
School % FRPL (1997)*	66	63
School % FRPL (2004)	87	59
School % Spanish Speakers	11	31
School Enrollment	236	350
Third-Grade Enrollment	34	38
Change in Stanford 9 (1997-2004)	18.3	(3.8)
Actual-Predicted Stanford 9 (2004)	10.8	(0.9)

Orange Grove Elementary School
Gains 26 points to surpass state average

|	Orange Grove	Comparison School
City	Somerton	
District	Somerton ESD	
School % Latino (1997)	85	98
School % Latino (2004)	90	98
School % FRPL (1997)*	83	77
School % FRPL (2004)	87	88
School % Spanish Speakers	80	86
School Enrollment	293	232
Third-Grade Enrollment	68	63
Change in Stanford 9 (1997-2004)	26.3	(11.0)
Actual-Predicted Stanford 9 (2004)	16.0	(5.9)
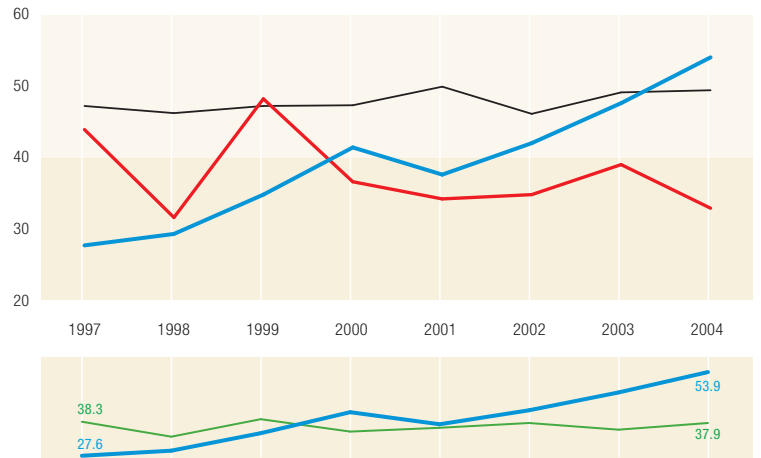
*FRPL is the percent of students eligible for the Free and Reduced-Price Lunch Program (a proxy for poverty). Sources for the data are in end note number 9. Unless noted, data is for 2004.

Eighth-Grade Math Stanford 9 Scores – Steady Climbers

Estrella Middle School

12-point gain puts Estrella even with state average

	Estrella	Comparison School
City	Phoenix	
District	Cartwright ESD	
School % Latino (1997)	37	42
School % Latino (2004)	75	79
School % FRPL (1997)*	53	63
School % FRPL (2004)	69	78
School % Spanish Speakers	53	59
School Enrollment	1103	923
Eighth-Grade Enrollment	563	459
Change in Stanford 9 (1997-2004)	12.4	0.6
Actual-Predicted Stanford 9 (2004)	6.0	(5.9)
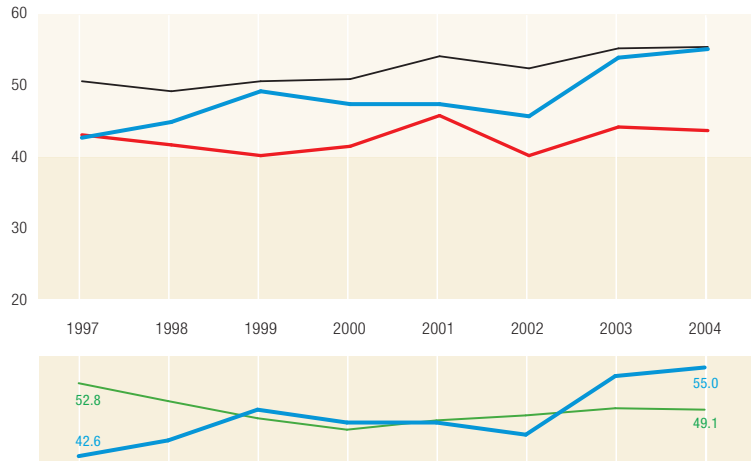
Granada East School

11-point gain puts Granada East even with state average

	Granada East	Comparison School
City	Phoenix	
District	Alhambra ESD	
School % Latino (1997)	47	76
School % Latino (2004)	82	90
School % FRPL (1997)*	87	69
School % FRPL (2004)	92	95
School % Spanish Speakers	73	35
School Enrollment	1298	1042
Eighth-Grade Enrollment	236	309
Change in Stanford 9 (1997-2004)	11.3	4.4
Actual-Predicted Stanford 9 (2004)	4.0	(5.7)
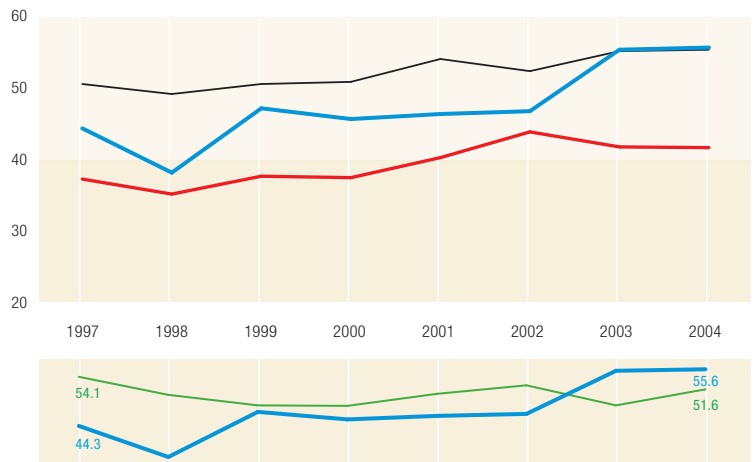
Larry C. Kennedy School

In four years, moves from bottom third to nearly even with state average

	Larry C. Kennedy	Comparison School
City	Phoenix	
District	Creighton ESD	
School % Latino (1997)	45	64
School % Latino (2004)	74	94
School % FRPL (1997)*	87	97
School % FRPL (2004)	91	96
School % Spanish Speakers	56	89
School Enrollment	757	824
Eighth-Grade Enrollment	87	104
Change in Stanford 9 (1997-2004)	15.6	(2.0)
Actual-Predicted Stanford 9 (2004)	4.7	(9.0)

■ BEAT-THE-ODDS SCHOOL STANFORD 9 ■ BEAT-THE-ODDS SCHOOL PREDICTED STANFORD 9 ■ COMPARISON SCHOOL STANFORD 9 ■ STATE AVERAGE STANFORD 9
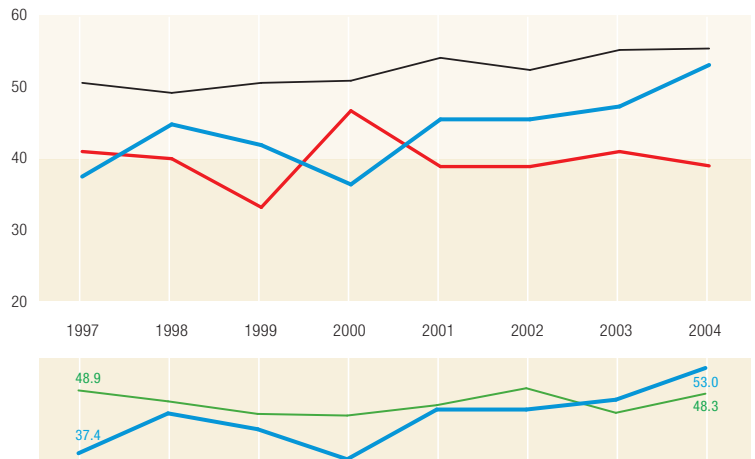
Sierra Middle School
Gains 18 points in four years

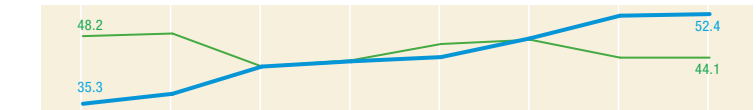|	Sierra	Comparison School
City	Tucson	
District	Sunnyside USD	
School % Latino (1997)	75	29
School % Latino (2004)	85	61
School % FRPL (1997)*	55	73
School % FRPL (2004)	78	80
School % Spanish Speakers	53	42
School Enrollment	1097	727
Eighth-Grade Enrollment	306	253
Change in Stanford 9 (1997-2004)	16.0	(2.1)
Actual-Predicted Stanford 9 (2004)	5.4	(9.9)

Wade Carpenter Middle School
Steady climb to almost reach state average

	Wade Carpenter	Comparison School
City	Nogales	**
District	Nogales USD	
School % Latino (1997)	98	
School % Latino (2004)	99	
School % FRPL (1997)*	78	
School % FRPL (2004)	89	
School % Spanish Speakers	97	
School Enrollment	654	
Eighth-Grade Enrollment	218	
Change in Stanford 9 (1997-2004)	17.1	
Actual-Predicted Stanford 9 (2004)	8.4	

**No school matched the unique demographics of Wade Carpenter
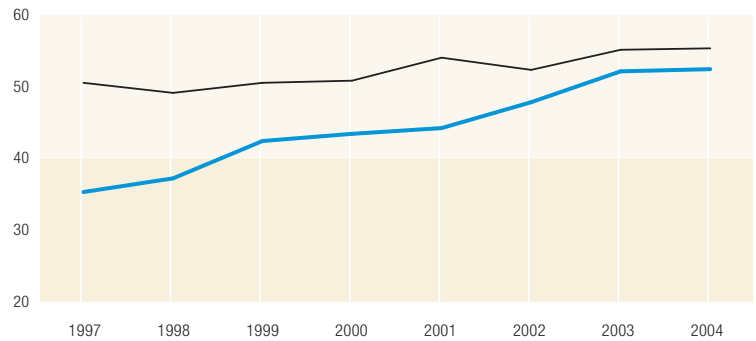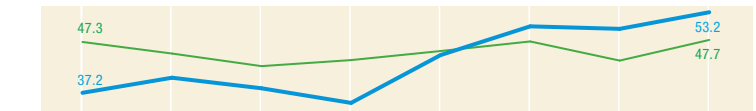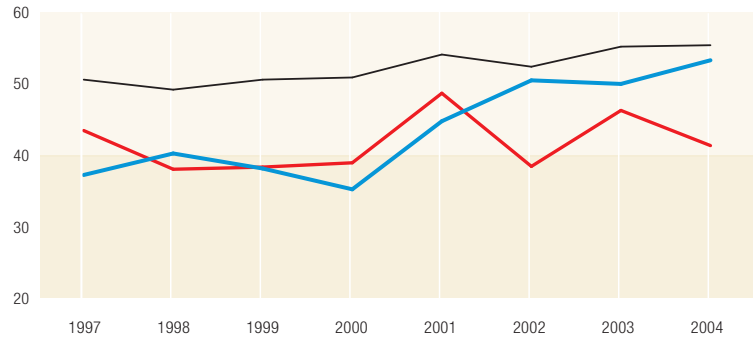
Third-Grade Reading Stanford 9 Scores – Steady Performers

Fairbanks Elementary School
Consistently higher than state average

	Fairbanks	Comparison School
City	Morenci	
District	Morenci USD	
School % Latino (1997)	37	12
School % Latino (2004)	68	23
School % FRPL (1997)*	Not Reported	Not Reported
School % FRPL (2004)	14	44
School % Spanish Speakers	0	5
School Enrollment	376	339
Third-Grade Enrollment	63	30
Stanford 9 (2004)	55.4	48.4
Actual-Predicted Stanford 9 (2004)	12.2	(8.6)
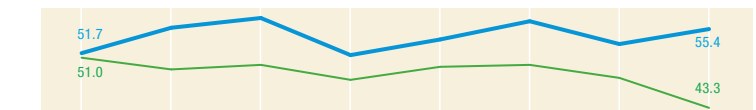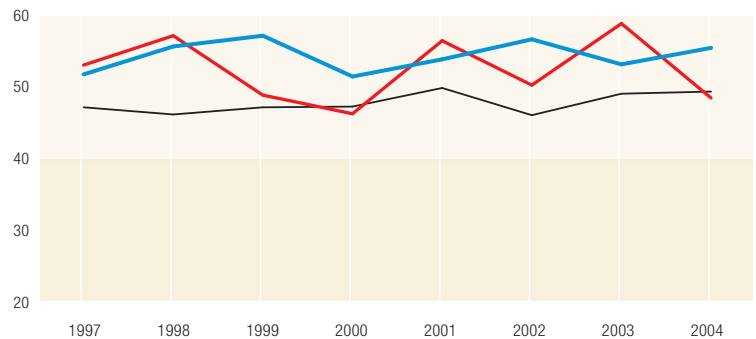
*FRPL is the percent of students eligible for the Free and Reduced-Price Lunch Program (a proxy for poverty). Sources for the data are in end note number 9. Unless noted, data is for 2004.

Gallego Basic Elementary School

Consistently higher than state average

	Gallego	Comparison School
City	Tucson	
District	Sunnyside USD	
School % Latino (1997)	68	53
School % Latino (2004)	86	83
School % FRPL (1997)*	59	92
School % FRPL (2004)	72	81
School % Spanish Speakers	27	56
School Enrollment	351	418
Third-Grade Enrollment	92	70
Stanford 9 (2004)	50.8	31.3
Actual-Predicted Stanford 9 (2004)	10.1	(7.7)

Phoenix Magnet Traditional School

Always at least ten points higher than state average

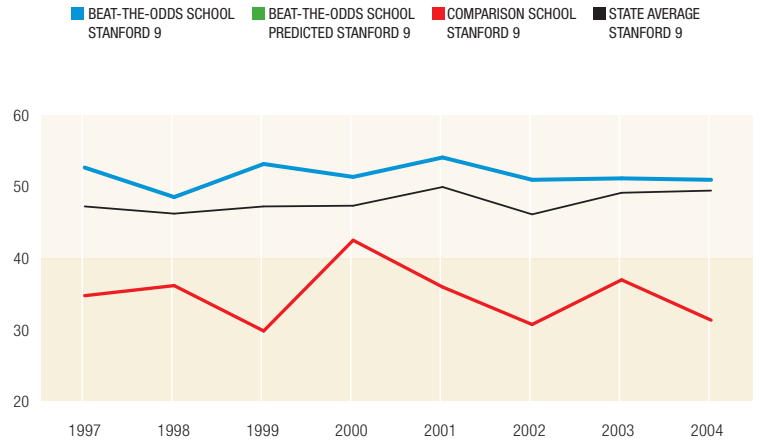|	Phoenix Magnet Traditional	Comparison School
City	Phoenix	
District	Phoenix USD	
School % Latino (1997)	59	61
School % Latino (2004)	66	73
School % FRPL (1997)*	54	75
School % FRPL (2004)	55	69
School % Spanish Speakers	38	35
School Enrollment	376	583
Third-Grade Enrollment	53	78
Stanford 9 (2004)	59.1	40.8
Actual-Predicted Stanford 9 (2004)	13.5	(1.1)
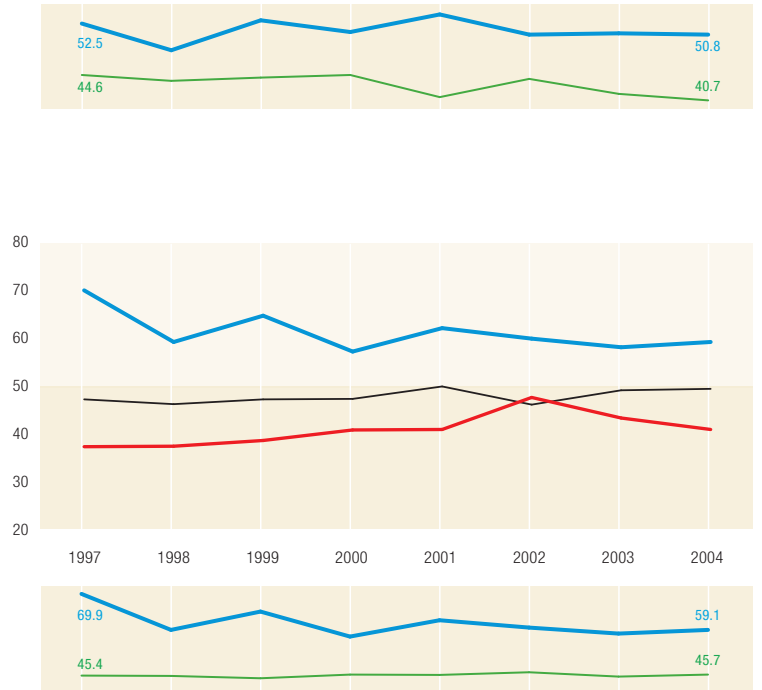
Eighth-Grade Math Stanford 9 Scores – Steady Performer

Phoenix Magnet Traditional School

Consistently higher than state average

	Phoenix Magnet Traditional	Comparison School
City	Phoenix	
District	Phoenix ESD	
School % Latino (1997)	59	61
School % Latino (2004)	66	73
School % FRPL (1997)*	54	75
School % FRPL (2004)	55	69
School % Spanish Speakers	38	35
School Enrollment	376	583
Eighth-Grade Enrollment	60	87
Stanford 9 (2004)	62.7	42.2
Actual-Predicted Stanford 9 (2004)	11.0	(5.2)
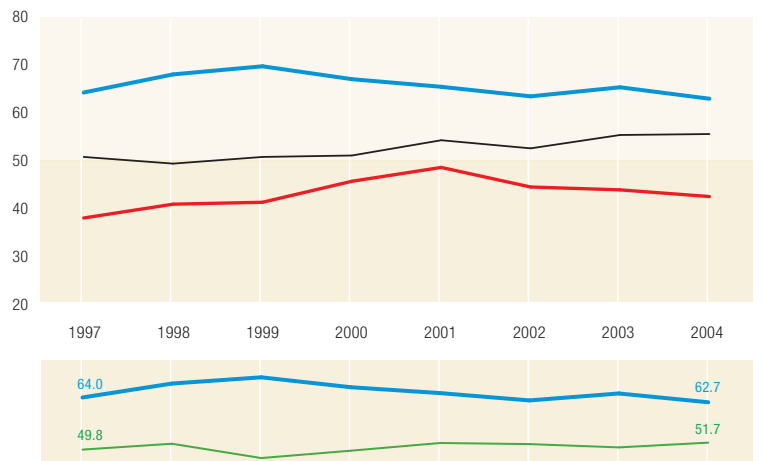
THE SIX KEYS TO SUCCESSFUL LATINO SCHOOLS

Successful schools do things very differently than struggling schools. Our comparisons revealed six specific elements that were common to all the beat-the-odds schools – and typically not evident in the comparison schools.

Interestingly, the six elements fall nicely into three basic categories put forth by Jim Collins. In his monograph, *Good to Great and the Social Sectors* – a supplement to *Good to Great* that deals specifically with issues associated with education, nonprofits, and other non-business enterprises – Jim Collins frames his *Good to Great* findings around three forms of discipline:

Disciplined Thought
Disciplined People
Disciplined Action

"Disciplined people who engage in disciplined thought who take disciplined action – operating with freedom within a framework of responsibilities – this is the cornerstone of a culture that creates greatness."

– Jim Collins

Elements of Success

A set of six factors that help drive gains in student achievement.

Foundation of Success	Measure of Success
Disciplined Thought	
Clear Bottom Line – not waiting for something to be different, but doing the best for every student under the circumstances **Ongoing Assessment** – frequent in-school assessments to spot problems early and drive improvement	Academic achievement per student
Disciplined People	
Strong and Steady Principal – focused on the things that truly improve schools and keep pushing ahead no matter what the roadblocks **Collaborative Solutions** – problem solving is pushed throughout the ranks, not concentrated in a few people at the top	Academic achievement per student
Disciplined Action	
Stick with the Program – it's not about a particular program, it's about selecting a good one, sticking with it, and making it better and better **Built to Suit** – intervention is personalized so it suits each student's needs	Academic achievement per student

Clear Bottom Line

Beat-the-odds schools emphasize the achievement of every student in every classroom *and* take responsibility for that performance.

A school's culture, its sense of mission, and its core values are hard things to measure. Schools often try to convey culture and values through visions, mottos, and mission statements. What's more important, though, is how a school's culture manifests itself in day-to-day operations.

Values and culture stand out as one of the strongest and most consistent contrasts between the beat-the-odds schools and the comparison schools. In the beat-the-odds schools, the school's culture can best be described as taking responsibility. These schools are focused on the following:

– **No excuses:** Don't even think about playing a blame game when students aren't learning. Have the strength to look at the problem and take responsibility.

– **Accountability:** Don't think the solution is "out there." If students aren't learning, the school needs to change.

– **Bottom line:** No one is allowed to lag behind. If every student in every classroom isn't learning, the school isn't doing its job.

This is a clear bottom line.

It used to be that student achievement was measured by school, by district, even by state. This was a good way to highlight big-picture progress and compare states, schools and districts – but not a good way to identify and fix problems involving individual students.

A clear bottom line, by contrast, focuses on ensuring that each individual student learns. This shift in

focus began in the 1990s, when new standards for testing and accountability began to change the approach of many schools. But this new approach really took hold in 2002 with the federal No Child Left Behind Act. NCLB turned the achievement pyramid on its head – schools will now have to build gains in achievement one student at a time because schools have until 2014 to bring every student up to the level of "proficiency," and every school must demonstrate "adequate yearly progress" toward that goal. Failure to do so has all sorts of consequences – fewer federal dollars, negative public exposure, and possible school takeover by the state.

NCLB was definitely an attention-getter for the comparison schools. A number of them are refocusing and undertaking improvements similar to the best practices found in the 12 successful schools (see Taking Responsibility: A Timeline of Federal, State and School Actions).

By contrast, the beat-the-odds schools didn't wait to be told; they prioritized student achievement on their own initiative years before NCLB's "average yearly improvement" hammer. And so the culture of responsibility for every student is much more deeply embedded. At Gallego Elementary, for example, this attitude was fostered at the school's start in the early 1980s, when the school board, school leaders and teachers focused on a "Back to Basics" curriculum and building a "highly-structured environment that encourages learning, personal responsibility, and accountability for one's actions" (Gallego Philosophy).

Taking Responsibility: A Timeline of Federal, State and School Actions

1980s
Gallego Basic created a new school when concerned parents wanted a back-to-basics alternative school with mandatory parental involvement, clearly defined academic standards and strict discipline.

1983
United States Secretary of Education Terrence H. Bell presents *A Nation at Risk.*

1990
Arizona Student Assessment Program (ASAP) passed, imposing the following requirements:

– Essential Skills Curriculum for 9 subjects and tests
– District Assessment Plans
– Annual School Report Cards
– Performance Assessment

1991
Phoenix Magnet Traditional created as a new school, using desegregation money, when concerned parents wanted a back-to-basics alternative school.

1994
Federal Improving America's Schools Act requires states to establish content and performance standards in reading and math by the 1997-1998 school year, with final assessments aligned with those standards 3 years later.

Arizona Charter School legislation passes; ASAP becomes high school graduation requirement.

1995
State School Superintendent Lisa Keegan suspends ASAP Form D, claiming it lacks sufficient scoring reliability and content validity, and convenes Academic Summit.

1996
Orange Grove school begins implementing Larry Lezotte's principles for effective schools.

Legislature passes HB 2417 requiring Essential Skills testing in at least four grades and competency test for high school graduation.

State School Superintendent Lisa Keegan terminates ASAP program and calls for development of new performance objectives in reading, writing, and mathematics.

Keegan creates a separate oversight committee to review the Performance Objectives and make suggestions for potential measurement instruments – this committee becomes known as AzTAC (Arizona Technical Advisory Committee). This committee remains operational until late fall of 2002.

1997
Sierra Middle school starts improvement plan.

State adopts new Performance Outcomes for third, fifth and eighth grades and high school.

1998
ASAP replaced by Arizona Instrument to Measure Standards (AIMS). High school graduation test initially moved to the cohort class 2002. AzTAC warns State Board of Education that this is too early a date for successful implementation and recommends the date of 2006.

Wade Carpenter school starts changes.

Alice Byrne begins aligning the curriculum and implementing guided reading groups to provide small group instruction and increased student engagement.

1999
First time Arizona high school students take AIMS test to see how they are performing against the state's curriculum standards.

Fairbanks school starts improvement plan.

Clawson school starts collecting data on students and aligning curriculum to state standards.

2000   Proposition 301 passes, raising sales tax to increase funding for education.

Proposition 203 passes, requiring public instruction to take place in English.

State Board of Education adopts AzTAC recommendation that the Mathematics Standards and Performance Objectives are out of line with the level of current instruction at the high school level.

Core performance objectives for high school math and test blueprint are revised. Performance objectives for reading and writing do not change.

Graduation requirement moved to cohort class 2004

Larry C. Kennedy school starts grinding away on data in 1996, but new process gets underway in 1999-2000.

John F. Kennedy school begins alignment of state standards and exploration of best practices.

Estrella school starts amended version of Connected Math Program and lengthened class time.

Clawson school improvement begins.

State implements program to evaluate "successful" schools.

State implements AIMS assessment for third, fifth and eighth grades in reading, writing, and mathematics.

2001   Granada East school starts improvement plan.

Estrella comparison school starts Connected Math Program and develops a math coaches model.

State implements first report on "Identifying Successful Schools."

2002   Federal No Child Left Behind Act signed into law, placing a greater responsibility on individual schools to improve student achievement and individual school districts to take action regarding schools that don't meet standards.

Sierra Middle comparison school starts analyzing data in 2000-2001, identifies greatest needs, devises solutions, and implements them by 2002.

Graduation requirement moved from 2004 to 2006.

Orange Grove comparison school begins teacher training for assessments. The program was implemented the following year.

Alice Byrne comparison school adopts a new reading program (district wide) that includes continual assessment of students and small group instruction.

Fairbanks comparison school participates in district improvement process.

Gallego comparison school starts analyzing achievement data by student and classroom, and monitors student attendance.

2003   Arizona reading, writing, and mathematics Standards and Performance Objectives rewritten.

John F. Kennedy comparison school begins improvement process.

Larry C. Kennedy comparison school chooses Larry Lezotte/Brazosport method and starts focusing on data, calendaring out the standards, and testing every 3 weeks.

Ongoing Assessment

Teachers and principals alike assess student and teacher achievement early and often – and use the information to drive improvement rather than to assign blame.

Forget what you've heard about all schools hating performance metrics and resisting accountability. The 12 beat-the-odds schools provide riveting evidence that principals and teachers in successful schools embrace regular assessments as a way of identifying problems sooner and understanding them much more clearly.

Frankly, this was one of the biggest surprises for us. Remember, we weren't testing hypotheses – but if you'd asked any of us to guess which items would consistently be identified by the schools as one of the top five reasons for success, we never would have guessed that collecting data and crunching numbers would have been on the list. Yet they are.

The key, however, is not simply that the successful schools have data – it's who is using the data and how they use that data. The schools are deeply engaged in their own assessments in a way that can only be characterized as embedded. There is much, much more to the data analysis than simply looking at the aggregate test scores and exit exams at the end of the year, when it's too late to solve problems. Principals and teachers are collecting and poring over many metrics and measurements. They are doing it over and over, often every week or every month, to make sure they are catching problems as they arise.

And they're not just looking at aggregate data. They're disaggregating the data so they can look individually at each classroom, each teacher, and, most importantly, each student. They are digging deeper and considering data from enough angles to unmask problems. This level of specificity is critical because of this unmasking. Individual students and their problems become visible through the embedded assessment process. And visibility is the first step to ensuring that no struggling student and no struggling teacher is left behind. The self-audit tools vary from school to school, but they all serve to make problems visible.

Of course, the way the principals and the teachers respond to the data is just as important as the data itself. And here again, the 12 schools are inspirational and instructive. It's not just relentless assessment that makes the beat-the-odds schools stand out. These schools are also hardheaded about using this knowledge to change so as to improve student outcomes. These principals and teachers are, essentially, doing "root cause" analysis – working backward through the data to pinpoint deficiencies in the "inputs" – curriculum, teachers, etc. – and taking steps to immediately correct defects in practices.

Continuous Monitoring at Alice Byrne

Alice Byrne Elementary school in Yuma uses the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) system, a Web-based database offered by the Arizona Department of Education, which allows schools to enter their data on-line and generate automated reports. This benchmark testing, which is designed to monitor each student's literacy and reading skills, is conducted three times per year, while progressive monitoring is used as frequently as every two-to-three weeks or at the teacher's discretion. Progressive monitoring is especially important for the children whose performance is labeled "falling below" or "approaching" because it enables the teacher to determine the appropriate interventions. This process has made a real difference with English Limited Learner (ELL) students, according to Principal Juli Peach. Alice Byrne's comparison school in our study did not mention testing except in the context of year-end state and federal requirements.

Weekly Monitoring at Orange Grove

Orange Grove Elementary school "goes overboard," conducting benchmark assessments every week. "We can't wait till monthly or we'll get so far behind we won't be able to catch up," Principal Frank Reed said. Teacher teams always meet weekly to discuss what the assessments are telling them about every student. These meetings must have an agenda and discussions are documented, thus providing even more data about where each child is on the spectrum, what is working, and what isn't working.

Tallying by Hand at Gallego Basic

Gallego Elementary school uses monthly assessment tools in the Morrison-McCall Vocabulary Test and the McCall-Crabbs Test of Reading Comprehension. Each teacher turns in class and student reports every week to the principal, who reviews them to see that clear objectives have been met. Also, progress reports go to parents starting the fifth week of school, rather than after the first quarter. Teachers do tallies by hand and turn progress reports in to the principal or committee.

Self-tracking at Wade Carpenter

Wade Carpenter school began focusing on data in 1998. A new principal and teachers began breaking up school-wide data to identify areas of concern more specifically. Although the school focused on the low-average students, all students were exposed to a newly aligned and supplemented Saxon Math program, and quarterly testing by the Northwest Evaluation Association. Students took the tests on-line and got their results in 24 hours. And, the students made their own charts showing their performance – strengths and weaknesses in different areas. This gave the students ownership of the testing – and suddenly it mattered to them.

Teachers used the results to plan instruction on the content clusters that students needed help with, and to place them in homogeneous groups.

As a result, this border school with almost 100 percent Spanish-speaking and impoverished students (the demographics are so extreme that they have no comparison school) has improved its test score by almost 20 percentage points, come close to the state average, and significantly beat its predicted scores two years in a row.

Strong and Steady Principal

Principals help schools succeed not when they are flashy superstars, but when they stay focused on the things that truly improve schools and keep pushing ahead, no matter what the roadblocks.

In a meeting with our research team, Jim Collins told a story of three people – a philosopher, a mathematician, and an entrepreneur – who are told to go one at a time into a room and to come out with a cat. The philosopher comes out with some insights into the nature of the cat – but no cat. The mathematician comes out with the formula for making a cat – but no cat. The entrepreneur goes into the same room and comes out without philosophical thoughts or formulas. He just comes out with a cat. That's not because he's a magician. It's because he does whatever it takes – with whatever resources he finds in the room – to come out with a cat.

The same is true of principals. Some go into a school and come up empty-handed, while others go into the same school and come out with a cat – that is, with better academic performance from the same student population.

What's the difference? For one thing, the best principals seem to recognize that they have a new role – one that is akin to managing knowledge workers in the business world. They still have to run a school smoothly. And they must set a direction and have a strategy for school improvement. But, like the entrepreneur who comes out with a cat, they actually have to know how to move people and combine resources to come up with something tangible in pursuit of results. In the heavy seas of school reform, the principal is both the captain guiding the ship's route and the ballast providing stability. If that sounds like a mixed metaphor – how can you be both the captain and the ballast? – that gives you an idea of how tough it is to be a successful principal and what being a principal really involves.

In the business world, the best managers are admired for their ability to capture improvements from "knowledge workers" – a subtle skill that shows respect for their highly skilled workers and an approach that provides their workers with enough flexibility to do their job well and enough accountability to do it right. The best principals are no different. They manage the school improvement process by being neither too rigid nor too flexible – and do so largely with what they have. They make no excuses for the school's zip code, ambivalent parents, or inability to replace teachers. They keep pushing ahead, no matter what the roadblocks.

It's also important to note that the best principals are characterized by determination and collaboration, not superstar status. It's always tempting to try dramatically to turn around a school – just like a business – by bringing in a high-profile, big-personality leader. In *Good to Great*, Jim Collins found that this usually doesn't work – or it only works for a short while. The same seems to be true in education: Of our nine steady climber schools, most are turning around under the leadership of the same principal they had in 1997, the beginning year of our study (see Principal's Tenure chart). And they stand out as doggedly determined to guide their school to significant improvement – and to give ownership of the process to the teachers.

Strong Leadership at Fairbanks

Fairbanks Elementary school in Morenci, a small rural school located in the center of the community, was one of the steady performers in our study. Six years ago, the principal formed a committee of teachers to review what works and what doesn't – allowing the teachers to take ownership of school improvement. The result? The school steadily exceeded the state average third-grade reading scores from 1998 all the way through 2004. And one of the main reasons for this success is the principal.

Fairbanks principal, Philip Martinez, has a positive attitude and speaks to the larger goal of continuous improvement. He rarely blames external factors such as student demographics. The principal established a process permitting teachers to analyze, select, and change educational programs, and decided to move reading to the morning and to spend more time on reading every day – from 1.5 to two hours.

By contrast, at the comparison school to Fairbanks, the principal said his school is "doing whatever the district is doing." "I'm just going along and trying to hide from the state department of education," he said in an interview with our research team. He "hates committees" and tends to rely on district-driven processes to create changes. He leaves teachers alone to do their thing, and delegates data analysis to one person who isn't particularly connected back to the teachers. In spite of the fact that the comparison school was virtually identical to Fairbanks, the principal was not providing the same kind of leadership.

Improving Leadership at a Comparison School

One encouraging trend is at the comparison school to Gallego Elementary. The comparison school had slightly below-predicted test scores for third-grade reading during the entire study period, and the scores did not improve between 2002 and 2004. But beginning in 2002 – spurred by No Child Left Behind – the principal called on the teachers to begin disaggregating data and examine each child's case individually. Data by student and by classroom was "a huge wake-up call." Teachers realized federal and state requirements to show yearly progress would be impossible to meet if students didn't attend school and if students were three years behind – one year's progress still leaves them two years behind.

The school now has a laser-like focus on attendance and focuses intensely on tutoring – two-thirds of the children in the school are tutored by teachers – every teacher tutors ten hours after school per semester. It's too early to tell whether the school will turn around, but the steps are encouraging. Last year, the school had the second-highest attendance in the district. The school also learned not to make excuses: The school almost didn't start the tutoring program, the principal said, because conventional wisdom is that students cannot stay after school because there are no buses to get them home. Turns out transportation isn't a barrier – everyone pitches in, teachers and parents, making the parking lot a "circus" with all the transportation activity.

Principal's Tenure: Number of Principals in Eight Years

Beat-the-odds schools don't have a history of very frequent turnover in principals; comparison schools do.

Number of Principals (1997-2004)	Beat-the-Odds Schools	Comparison Schools
1	6	3
2	5	3*
3+	2*	6

*Magnet Traditional and comparison schools are counted twice.

Collaborative Solutions

At beat-the-odds schools, responsibility for school improvement is shared among the teachers and staff, not concentrated in a few people at the top.

Leadership from the principal is important. But the beat-the-odds schools don't just concentrate responsibility for improvement in a few people. Principals reach an agreement on the goals and then distribute responsibility for improvement among all the teachers.

It's probably no surprise that teamwork and getting teachers to buy in to the idea of improvement is a common trait of successful schools. Still, the hard truth is this:

First, schools still aren't doing this most basic of things to ensure successful reforms. Both beat-the-odds schools and comparison schools describe instances in which top-down mandates – from the principal or from outside the school – failed from the get-go or were not sustained.

Second, schools may collaborate well on some things but not the ones that really matter. Teachers might work together well in preparing an improvement plan, for example, or carrying out easier but less meaningful activities that are unlikely to result in substantial increases in student learning. But they may not be collaborating on other, harder things such as changes in classroom instruction or school culture that are more likely to engender real, long-term improvements in student achievement.

Finally, there's no question that even the most far-sighted school leaders have limited control over personnel and resources, making it difficult to get rid of teachers who resist reform initiatives and get teachers who are a good match in terms of abilities, experiences and attitudes.

Two of the beat-the-odds schools are actually built-from-scratch back-to-basic alternative schools, so they were able to select teachers and staff that buy in to the school's approach at the very beginning.

But the other ten schools also got teachers to sign on to play a key leadership role in school reform. It was a harder challenge to fix the existing schools, but over time they did find ways to get teachers engaged for the long haul as problem-solvers.

The approach typically looks like this:

– **Face the Facts:** Involve teachers and other staff in the analysis of the data and other empirical evidence at all levels – student, grade, subject and school-wide – so that they identify problems, including identifying internal weaknesses that are causing or abetting low outcomes and obstructing improvements.

– **Find the Solutions:** Involve teachers in identifying possible solutions to problems and opportunities for making changes that will lead to greater success.

– **Select Good Solutions:** Use data, creativity and extensive investigation of best practices and evidence-based practices to decide among possible solutions. Sometimes the solution is district driven, but the school enhances it.

– **Align Resources:** Provide training – enough of it and at the right time – for teachers and others, reassigning teachers based on their skills and experiences, finding ways to rework schedules so teachers can meet during work hours, rather than assuming they will meet on their own.

– **Do It Again and Again:** Create a process and a strong coalition for on-going change.

Steady Climbing at Sierra Middle

Sierra Middle School is one of the best examples of a "steady climber" that used grassroots leadership to improve the school. In the mid-1990s, Sierra Middle was retaining ("holding back") 100 students per year, the highest number in its district. Under principal Robert Miranda's leadership, the school began with an analysis of student achievement data as a baseline for improvement. This led to the Sierra School Improvement Plan. The school had tried top-down approaches in the past. This time, Sierra created three committees to investigate where and how to make the improvements and put every staff member on one of the committees. The result was a plan that teachers bought into – using the Pat Davenport Instructional Method and aligning math curriculums with state standards – and one that has focused on continuous improvement. The goal is to teach to the academic standards and prepare every single student for Arizona's AIMS test.

Since then, Sierra Middle has continued to add new programs – Accelerated Math, for example – and to recruit high-quality teachers. Miranda credits teacher recruitment and training for their success. The math coordinator – one of the school's best teachers – is teaching both the math improvement classes and advanced classes. Eighth-grade math scores continued to drop until 2000, but between 2000 and 2004 they went up by more than half again as much.

On a Relentless March With a Strong Principal

At Larry C. Kennedy, principal Johnny Chavez frankly says he has teachers who are "front-runners, average, and resisters." He gets the front-runners on board and then uses them to help convince the average teachers. With resisters, he tells them they don't have to change if they can show results – but, if they don't show results, they must change. "When you show them data, it's no blame, no shame, no excuses." This principal says the most important factor is teacher ownership: "if the teachers own it, they'll do whatever it takes." But not having only "the right teachers" will not stop him and his school. He knows they are headed in the right direction, but very slowly. They believe in what they are doing and they're just working at doing it. They have been "just working at doing it" since 1996.

Collaborative Engagement at Clawson

When Clara La Forge arrived at Clawson Elementary in Douglas back in 1999, she decided not to launch into change too quickly. She observed her new school for the first part of the year, and noticed that the building smelled bad, teachers were not in their classrooms for extended periods of time, and teaching assistants were in the library.

She worked with janitors closely to clean up the building, and rearranged schedules so she and teachers could stay late cleaning up. She abandoned her own lunch periods and her office to do lunch duty, playground duty, or simply hang out in the halls or classrooms. She watched and listened.

She told the teachers, "I'm here to learn, not tell you what to do. I'm not the expert on these kids. You are." All she asked was for them to pre-assess their students' prior knowledge and see their deficiencies. She brought in a consultant (who worked for free) to align their curriculum to state standards, conduct in-service training, and run the diagnostic, pre- and post-testing program. Then she waited.

When test data rolled in, the teachers came to her for help and resources. La Forge gave them a resource library in her former office. There, they found individual supplemental materials for each child and enhanced the Saxon Phonics curriculum to meet state standards. The teachers stayed in their classrooms and the aides became tutors and teachers as well. Teaching teams met weekly to discuss performance, find ways to re-group the students that were struggling and re-teach the material to them. They decided their goal was to put their students at the fiftieth percentile mark and used the mantra "teach, re-teach, evaluate and correct, monitor and adjust" to get there.

And they did. In 2000, Clawson was at the bottom third in the state for Stanford 9 test scores. By 2005, they were only one percentage-point shy of making it into the top half.

Meanwhile, Clawson's comparison school got a new principal in 2001 who also believed in showing teachers the data and holding them accountable for student performance. But the principal did not provide training for teachers immediately. Tutorials were conducted, but only for English Limited Learners students during lunch and after school. In essence, the principal tried to incorporate the right ideas of aligning curriculum to state academic standards, diagnostic testing, and accountability – but for only some of the students, and without the teacher buy in. The school's scores decreased by five percentage points during the principal's tenure.

Stick with the Program

The magic isn't in a particular program – there are many good ones. The magic occurs when the school finds a program and sticks with it.

Like any organization under pressure to improve, schools crave the easy answer – the "magic bullet"– the program or approach that will fix everything. But the magic doesn't lie in the program per se. It lies in the school picking a good program inside a rigorous, data-driven process and sticking with it.

We found that the beat-the-odds schools didn't have a particular program in common. They use a variety of programs and teaching methods, ranging from Spaulding Method in Gallego, Back to Basics in Phoenix Magnet Traditional, Pat Davenport in Sierra Middle, and Accelerated Reader in Fairbanks and other schools. Sometimes the beat-the-odds school and the comparison school did use the same program, especially if they were located in the same district – but the fact that student achievement results were very different indicates it's not the program per se that accounts for the difference.

What we did find, however, was that all the beat-the-odds schools did the same thing. They found a way to buy in to a good program with a strong track record of producing results, and used that program, over time, in every classroom, making changes if the data said they needed to. If any one of several programs might have worked in their particular situation, the school selected a program that the teachers felt they could embrace and mold to fit the school.

So the key, from the beat-the-odds schools' experiences, is to pick a program or set of programs based on:

- **Knowledge:** Know the needs and abilities of your school and know what programs work – based on the evidence, not perception.

- **Ingenuity:** Organize and train to fit a good program and credible curriculum into your school.

- **Focus:** Pursue it relentlessly.

There are, of course, some gains that spring immediately from something new. And, some of the chosen "magic bullet" programs have, as part of their systems, a focus on continuous, data-driven improvement. Picking one of these can certainly help a school. But, when all is said and done, what performance requires is hard, focused, purposeful work. If diligence, persistence and commitment are lacking, ingenuity and a good program are wasted. It is focus and hard work that matter most.

Orange Grove: An Effective Program – Consistently Applied

Orange Grove school had no plan when principal Frank Reed got there ten years ago. But Reed had some previous experience with Larry Lezotte's Total Quality Effective School approach, which seeks to move schools away from the factory model to the "knowledge worker" model. After the teachers embraced the idea of both vision and change, Orange Grove worked consistently over time to implement the Lezotte factors of success – having high expectations, creating a safe and orderly environment, and developing strong instructional leadership. The school also set a goal of being the first school in Yuma County to be accredited by the North Central Association Commission on Accreditation and School Improvement.

The ideas did not take hold overnight. The school began implementing them one by one, and after five, six, seven years they started taking hold. They also paid particular attention to implementing these approaches with English Limited Learners by being very precise in carrying out the Lezotte principles; sustaining them over time; and going the extra mile. It was this type of consistent implementation process – not just the magic bullet of the Lezotte principles – that led to the improvement.

Steady Performance at Phoenix Magnet Traditional

Phoenix Magnet Traditional School was created in 1991 at the instigation of parents who wanted a different school in the Phoenix Elementary School District. The parents did their homework and recommended to the school board a "back-to-basics" alternative school. Current principal, Anthony Perkins, attributes the school's success to its traditional philosophy and structured instructional program that emphasizes mastery of basic academic skills, classical and multicultural literature, and the use of computers with core curriculum. There are high expectations for students, teachers and parents – the goal, for example, is reading at first grade, not third grade, and parents must sign contracts to uphold their role. The school tracks student progress and addresses individual student needs within the classroom, not through pullout programs. The school also has regular "vertical team" meetings – that is, kindergarten teachers meet with first grade teachers, first grade with second grade, and so on, so there are no gaps or repetition from year to year.

The school was established with desegregation funding, and today has a student enrollment that is 65 percent Latino and 55 percent lower-income. The school has consistently outperformed predicted test results. It is the only school that made the beat-the-odds list for both third-grade reading and eighth-grade math.

For Every Model, There is a Successful School and an Unsuccessful School

Estrella Middle School and its comparison are in the same district. Both had the same math program imposed from above at the same time and in what has been described as "a Gestapo manner." The two schools' math scores were very similar at the start of this period, with Estrella's slightly worse than the comparison school's.

Estrella's principal Patricia Heichel gave her teachers ownership of the program. She believed the program could be good, but her teachers were skeptical. She told them to fix it, and she got them training. The teachers created study committees, which she encouraged. Within the confines of the district-imposed program, the teachers made it their own, supplementing where they saw weaknesses. Heichel created a win-win-win situation. She followed her district's guidelines, inspired her teachers and they improved outcomes for their kids. Estrella's test scores started even with its comparison school, and rose to 11 points above by 2004. And, while demographic shifts predicted a decline in test scores, they actually rose by 12 points.

Knowledge, Ingenuity, Focus: John F. Kennedy

Jessie Arroyos was a newly minted principal at John F. Kennedy Elementary School in Superior, but she had grown up in the rural mining town; she had taught first and second grades; and she had recently completed graduate work. So she went to work, helping her experienced teachers improve the school.

First, she got grant money for summer training solely in interpreting data. The teachers spent two years learning how to read, interpret, and use data, test scores, and curriculum. They enjoyed doing it as a team, being treated as professionals and equals, and appreciated the new knowledge that helped them better understand the level that their students were achieving.

They spent the next two years looking at their data and matched it with a curriculum series that would strengthen their weak spots. One of these areas was reading, so they established a 90-minute reading block each and every day. Everyone took part in the reading block. Not just all the teachers, but also the librarian, the computer teacher, the special education teacher and Arroyos herself. Even the UPS man knew not to come around during the reading block, lest he interrupt it.

As a result, this school, with 75 percent Latino students and almost 90 percent on the Free and Reduced-Price Lunch Program, has improved its third-grade reading score in every single one of the last five years, when many schools took a dip due to changes in reporting processes. For the last two years they have beaten their predicted score by almost ten percentage points, and they have gone from being below the state average in 2002, to tying it in 2003, and beating it by five percentage points in 2004.

John F. Kennedy's matched comparison school actually had fewer Latino and low-income students, but more Spanish speakers. They instituted similar concepts, such as Six Trait writing and brought in a reading specialist, but their reforms lacked the intensity of John F. Kennedy and they don't seem to use data at all. Overall, they have declined by four percentage points and are doing slightly worse than their demographics predicted.

Built to Suit

Beat-the-odds schools are figuring out ways to customize instruction and intervention so it exactly suits each student's needs.

Public schools are often thought of as industrial-age factories for education – providing mass-produced standardized education.

But we found that the beat-the-odds schools are looking more like Starbucks than Ford Motors. Instead of a one-size-fits-all approach, they are focusing on individual students and customizing education to fit individual needs. And, instead of measuring achievement by grade and by school, they measure achievement per student, per classroom, and per teacher.

This shift in performance measures drives a huge change in the way schools approach the entire learning process – away from the assembly-line approach and toward customization. It leads to the creation of formal, yet flexible, structures that ensure all students receive the personal attention and support they need to succeed academically.

Some of the comparison schools are adding tutors. This can be a good first step toward personalized instruction. But, at the comparison schools, tutoring is not always part of a long-term comprehensive effort for school improvement. The goal is usually short-term – to raise test scores and pass AIMS tests. It's a lot like preparing to win a short sprint.

By contrast, the beat-the-odds schools are putting in place a whole set of interlocking practices and policies geared toward winning a marathon. It involves a vital cycle of instruction, assessment, and intervention, followed by more instruction, assessment, and intervention.

In some cases, this approach can mean putting students of different abilities on different tracks. (See case study for Orange Grove). But it does not mean testing them once, putting them on a track, and keeping them there forever – because constant assessment and intervention tends to keep tweaking the educational approach for each student. Over time, this leads to an educational program tailored to each student to help maximize his or her success within the school.

Some of the other keys to this new model have already been discussed in this report. Ongoing assessments and collaborative processes, for example, allow schools to identify and deal with sudden shifts in student needs, on the fly, in real time, even in complex schools where there are hundreds of students. In the end, undertaking all the practices here can help schools shift from mass production of a one-size-fits-all education to individually targeted, customized education for each student.

A Tiered Program at Orange Grove

Orange Grove school's mission is "individual academic excellence." And to operationalize that goal, the school has a tiered program for student intervention:

Tier 1 –   All students: Whole group instruction in the regular classroom setting.

Tier 2 –   Students who didn't get it the first time: Intervention time set up within their reading block (protected 90+ minute block of time). They are put into small groups of two or three and re-given the instruction by the teacher or someone trained in intervention.

Tier 3 –   Students who still don't get it: Every day from 2:35-3:05 pm every classroom K-5 stops what they're doing and those who didn't get the focus or lesson of the day at Tier 2 are re-taught the lesson in some different manner. The other students can do their homework or get enrichment.

Tier 4 –   Final Intervention: After school – for students who need extra time because curriculum is so rigorous.

Interlocking Practices at Gallego Basic; Only Tutoring at the Comparison School

At Gallego Basic Elementary School, a set of interlocking practices are designed to create a continuous process of customizing instruction. The school uses the Spaulding Method, a diagnostic method that focuses on elementary-level reading and encourages individual educational approaches. As part of the Spaulding Method, assessments are done weekly and monthly. And, according to Principal Debra Bergman, parent conferences are held after the fifth week, rather than after the first quarter. At Gallego's matched comparison school, they have instituted extensive tutoring – a good first step, but still not part of an overall set of practices designed to interweave customized education into the structure of the school.

Built to Suit: Granada East's Eighth-Grade Math

For many years, Granada East middle school's test scores hovered just below the state average, which might seem good to some since over 70 percent of its students speak primarily Spanish at home. In 2002 scores started to improve. By 2003 they were at the state average, and stayed there in 2004. Unlike many of the beat-the-odds schools, Granada East had the same principal, Frank Terbush, for 25 years. So what changed?

In 2001-2002, in response to "sagging test scores," Granada East implemented weekly assessments to determine if students were keeping up with a "pacing guide" the district had created. These pacing guides establish what a student should learn at what point in the year in order to meet state academic standards in time for the spring statewide tests. Teachers learned effective data analysis and how to make data-driven decisions in the classroom, such as how to group and regroup students as they mastered (or struggled with) new material. Teachers learned "closure" activities, where they reviewed the lesson and let the kids "feed back" information to them, allowing teachers to see weak spots that needed to be re-taught.

Meanwhile, their comparison school went through many principals and couldn't settle on what kind of block schedule to have, let alone how to interpret data. Although their test scores rose by about 4.5 percentage points through the eight years studied, they have been on a downward slump since 2002 and remain far below the state average.

"Dogs That Didn't Bark"

What's Not Different

Most of the focus in this report is on isolating what the beat-the-odds schools are doing differently from comparison schools.

"But don't forget the 'dogs that didn't bark,'" advised Jim Collins. In the famous Sherlock Holmes story, *Silver Blaze*, the key to the crime's solution was the fact that a dog did not bark when someone entered the room at night, as one might expect. The same is true here – there were things we'd expect would be different between the beat-the-odds schools and the comparison schools, yet we didn't find them. What's not different is as much a clue as what is different, because you don't want schools spending energy and resources on the wrong things or on the things that aren't going to drive important gains in educational outcomes.

What We Didn't Find

– **The Usual Suspects:** We didn't find important differences in class size, money, length of day or numbers of teachers meeting the federal definition of highly-qualified teachers. These numbers may be important differences between predominately minority schools and predominately Caucasian schools. But they don't tell the story when comparing mostly Latino and mostly poor schools that have achievement gains with other mostly Latino and mostly poor schools that do not.

– **Rapid Teacher Turnover:** We didn't find major differences in teacher turnover rates among the target schools and their comparisons. Most of the 24 schools reported little turnover in third-grade reading and eighth-grade math teachers. But they are worried about vacancies in the future as baby boomer teachers retire.

– **Parental Involvement in the School:** Although we found strong requirements for parental involvement – e.g., parent-school contracts – in the steady performer schools, we didn't find strong parental involvement across the board in the steady climber schools. And we did not find a lack of it in all the comparison schools. So, at least from our research, gains in student achievement do not appear to hinge on more parents involved in the schools. Parental involvement is likely a beneficial factor when parents are involved with their kids at home, i.e., with homework, and establishing a "study space." But as far as what to spend time and resources on at the school itself, other things matter more than spending a lot of time getting parents to the school to volunteer and participate in committees.

Maybe these things do help improve student achievement in some schools. But they were not among the factors we isolated as being different and thus likely to explain the differences in performance between mostly Latino and mostly poor schools. For principals and teachers interested in focusing on what they can control, the best bet to convert low-performance students, teachers, classes, and schools into high-performance ones is to focus resources and energies on the six elements identified through our research.

THE
ROAD
AHEAD

The message of this report is a message of hope: Public schools can turn around academic performance. Or – to put it more accurately – many public schools are already doing an excellent job of helping their students toward high academic achievement under arduous circumstances such as poverty, tough neighborhoods, and difficulty with English. They succeed even though, according to conventional wisdom, they shouldn't.

There just aren't enough of these schools – but it is possible to create more.

The 12 beat-the-odds schools discussed in this report are great sources for any school looking for ways to raise student achievement – especially at schools with a mostly Latino, mostly poor student population.

Just as important, however, is the fact that these schools provide three broader messages and strategies for education reform.

The first is that successful schools do things very differently than struggling schools. These schools focus on the right things – that is, the things that they can actually control that will make a big difference in student achievement.

Because two of our three steady performer schools were new alternative public schools that were built from scratch, it is important to address the question of whether a school can be successful under arduous circumstances *only* if it is new. There is a view among some education reformers that it is impossible to change existing schools to make them successful; only start-ups with a clean slate of teachers who buy in to particular approaches, can produce dramatically different results.

It's true that the two built-from-scratch schools in this study have advantages and do certain things very differently from the other schools. But we also find nine steady climber schools – schools that are basically in turn around mode – and one other steady performer that have a lot in common with the two steady

performers, and none were built from scratch. Like the built-from-scratch schools, the steady climbers take charge of the variables they can control, and they do not place excessive emphasis on family and social factors in explaining educational outcomes.

The second is that the things successful schools do are common-sense practices.

Most of what the beat-the-odds schools are doing are simple and basic practices of effective organizations. Following these practices in successful schools doesn't require major infusions of capital, new teachers or new structures – though new attitudes may be necessary. Rather, the evidence suggests, exceptional performance is achievable by virtually any school with the discipline to analyze over and over and keep focusing on what works.

The third is that the magic is within the school.

"Fixing" the school doesn't usually come from "out there" – not from the almost daily onslaught of flavor-of-the-month education reform programs or from the changes imposed from the outside by the school district, the state legislature, or from the Federal government. We do need to fix disparities and systemic problems at the policy level, but much of what it takes is actually in the hands of the people within the schools.

Even though much of what it takes to make a big difference in student achievement is within the school, the lessons of these schools also point to changes in public policy at the state level that could help schools with a mostly Latino, mostly poor student population implement these components of success.

Recommendations

Like so many other changes in public policy, these recommendations cannot rest on simply the idea of new programs and new approaches. They arise out of the knowledge that the nature of organizations – and hence the nature of management – is changing.

Like the inspiration for this study, the best guidance in this arena comes from the world of business management. Almost 40 years ago, in one of his most prescient statements, management guru Peter Drucker said that the biggest management challenge of the future would be to "make knowledge work productive" – just as the biggest management challenge of the past had been to make manual work productive. In the knowledge age, workers must be able to add value with their brains rather than their muscles. Their productivity comes from assembling new knowledge and using that knowledge to innovate. For leaders, the trick is to set long-term goals, but then allow others to work out ways of achieving those goals.

This change has huge implications for education. Not only does the business world need a different type of worker – one that is more knowledge-oriented – but the world of education itself must adopt different models in order to improve educational results. And that means educational policy must focus on undeniable changes at hand, such as

– The future will require leaders of knowledge workers, not just managers of facilities and budgets.

– The future will require models that push problem-solving throughout the ranks – to where teaching and learning occurs.

– The future will require systems and people who can deal with the flexibility of customization.

– The future will require real-time information and staying abreast of the latest knowledge and developments – including technology and learning processes.

– The future will require collaborative initiative rather than individual initiative.

In short, public policy changes in this arena must recognize that successful schools depend more on people, knowledge and a can-do culture and less on facilities, mandated programs, and "sticks." This is not to say facilities and accountability aren't important; they are. But policies to address these elements are largely in place – indeed, the accountability hammer doesn't get much stronger than the No Child Left Behind Act.

The critical issue for the next ten years is the capacity of principals and teachers to meet the new expectations imposed upon them by state and federal standards. Low-performing schools, and the people who work in them, must know what to do. Think of this as the "second wave" of education reform. So, while many of the keys to success we found involve internal practices inside schools, these practices must be supported by changes in educational policy and in state, district and philanthropic investments that will promote these practices. A package of policy changes and strategic initiatives could include the following:

– **Leadership Institutes for Principals**
The strong and steady principal is one of the keys to beat-the-odds schools. And the role principals must play is changing. So Arizona needs a new kind of Leadership Institute for Principals. These institutes should focus not on traditional matters such as budgets, buildings and buses but on the new skills required – leadership, learning, and linking people and resources. And these institutes should be aligned with programs of leadership and entrepreneurship because principals in low-performing schools must be prepared to be turn around specialists. The institutes could be funded by the state, foundations or the school districts themselves.

– **A Major Talent Initiative for Teachers**
With a looming wave of retirements and more schools opening every day, Arizona's educational system will soon be overwhelmed by the impending shortage of teachers. But one thing this state does know how to do is target a need in the workforce and create a system designed to plug the hole. As with nurses, and engineers in the biosciences, Arizona should set a state-wide goal for teacher recruitment and training – and meet that goal. The state can follow through by creating innovative and coordinated processes, including fellowships for school leaders to attend leadership academies, programs that teach collaborative education processes with data analysis, and high-quality mentoring for new teachers.

– **Analyze This**
We've repeatedly stated in this report that the beat-the-odds schools collect and use data in different ways. They produce new data about their students constantly and disaggregate it so that they can understand the needs of individual students. Businesses, universities, and foundations, among others, can initiate efforts to help schools obtain the necessary technological systems – and the skills to use those systems – so that techniques for a broader range of metrics and for *constant assessment* are well known and readily available to all schools.

– **Disseminate "Best Practices" and "What Works" as Widely as Possible**
Schools often learn about "what works" through word of mouth. One school gets a reputation for good work, so other schools call and visit, hoping to stumble across some "best practices." Arizona should raise the bar and institutionalize this transfer of information. One way to do this is to invite those organizations already gathering and disseminating effective learning, data analysis, and teaching methods to formalize interaction and partnerships with schools serving mostly Latino, mostly poor students. Arizona may even want to consider creating a center to work with schools on an ongoing basis.

– **Drive Authority Downward to the Principal**
Both teachers and principals play a key role in educational success. But because so much success depends on what can be controlled at the level of the school, the principal – the school's managerial executive – needs to control more things. The key to this is school district policies that give school principals more flexibility in hiring and assigning people, controlling budgets, and changing programs – especially to facilitate a more customized approach to education.

– **Reward Collaboration**
Collaborative work is essential to education reform. The beat-the-odds schools all had teachers working together and sharing expertise to raise the bar on teaching and learning. And yet, teachers and administrators have traditionally been solo practitioners in most schools – working in isolation, delivering content to students without interaction with their peers or administrators. Grants and performance systems that strongly reward collaboration leading to higher performance could buck the tradition of individualism. That's what companies like Whole Foods are starting to do – reward performance by teams or divisions, not individuals.

– **Be Patient**
One of the clear lessons of our study is that you can't expect schools in arduous circumstances to fix themselves overnight. The state and districts should avoid the temptation to make this set of recommendations yet another "flavor-of-the-month" magic bullet; they also should strive to avoid the temptation to swap in and out principals if there aren't immediate results. Remember, turning around a school where most of the students are poor, Latino English Limited Learners requires discipline. We have not discovered a quick fix – just a successful fix. Our

evidence indicates that, unless you build a new school from scratch, it probably takes three to five years before a school on the right track will actually show significant improvement.

There are, of course, strategies beyond those outlined here that Arizona should consider while trying to help mostly Latino, mostly poor schools build capacity to buck the trends of underperformance.

But based on our research, we believe the top priorities should be to bring the six elements of success to other schools and to increase the capacity of Arizona schools to use them. We have identified components of success for 12 schools – but there are more than 400 schools in Arizona that serve large numbers of Latinos and poor children. Implementing the six elements of success will require all the items listed above – but it will also require a huge increase in the capacity of school districts, principals and teachers. This is why leadership institutes for principals and a talent initiative for teachers are so important.

Together, these recommendations will accelerate Arizona's movement toward a more customized or "built to suit" educational system. And, if the capacity is expanded and the lessons of success are followed widely, then Arizona can overcome a major stumbling block to prosperity in the 21st Century by significantly raising the educational attainment of its burgeoning Latino population.

Notes

1 Stanford 9 is a national standardized test, which Arizona students started taking in 1997. It is taken in grades second through ninth, and covers reading, language and math. Arizona's Instrument to Measure Standards (AIMS), a test specific to Arizona, did not fit our purpose because in 2004 the data was available for fewer years than for Stanford 9. Other national achievement tests, such as NAEP, ACT and SAT, also did not work because they are voluntary tests, so not all schools had data. Given the options, the research team decided to use Stanford 9 test score data. We also decided to use the Normal Curve Equivalency (NCE) version of Stanford 9 test scores because this version allows comparison of the same grade over time.

2 The predicted score came from a regression equation that used student level data for all 1,709 schools to produce a "predicted" school score based on certain demographics – percent Hispanic, percent other minorities, percent students on Free and Reduced-Price Lunch (FRPL, a proxy for poverty), percent mobility and percent Limited English Proficiency.

Our regression model was used for each year. So, as the population of a school changed, its predicted score changed. If a school had more Latino students over time, its predicted score went down. If its demographics got "better," then its predicted score went up.

3 In the 1990s, students who were categorized as "non-English speakers" did not have to take the Stanford 9 tests. Rather, they had a Spanish-language version called Apprenda. In 2001-2002, the Arizona Department of Education started requiring that Spanish-speaking students take the Stanford 9 tests with everyone else. However, their scores were not counted in a school's "official" test results (e.g. the percentile ranks that the newspapers publish). Rather, the published scores included English-speaking students (Category 1) while the non-English speaking students were included in a separate, unpublished score (Category 2). Our research team worked through this issue by using student-level test-score data obtained from the Arizona Department of Education. This database allowed us to reclassify each student in every year for every school and allowed us to add students with limited English skills into the overall school average (Normally, these students are excluded.) A new average test score for the school now included all students who took the test, regardless of any extenuating circumstances, except for those students who clearly had disabilities – those who took an "invalid" test for special education reasons such as large print, Braille, or audio.

4 The analysis started with the dataset of all 1,709 schools – which includes high schools. A much smaller number of those 1,709 schools teach third grade and a smaller number yet teach eighth grade. Researchers further restricted the analysis to those schools with a test score in every year, since our analysis focused on performance over time and we excluded, from the start, those schools without test scores each year. Most of the excluded schools opened after 1997.

5 The research team was alerted to concerns that some schools could be excluding students from tests, so we made this possibility a "red flag" for special attention. We found little evidence of exclusion. The percentage of test takers classified as "invalid" varied over time in some schools, with improvements in the test scores frequently occurring in the year when a large number of test takers were classified as "invalid." However, the inconsistency of annual test scores and the erratic relationship between percent invalid and changes in NCE make it risky in most schools to conclude that students were being classified as invalid for the purpose of improving test scores.

6 The 12 beat-the-odds schools are not a sample of schools. Twelve is the total number of schools to emerge through a rigorous process with increasingly tighter cuts to find our schools.

7 To show the rigor of the selection criteria and the screening process used to find the beat-the-odds schools, here are several examples of schools that did not make the list – and why not.

Cordova Primary School
Third-grade reading

|	Cordova
City	
District	Alhambra ESD
School % Latino (1997)	39
School % Latino (2004)	76
School % FRPL (1997)*	Not Reported
School % FRPL (2004)	Not Reported
School % Spanish Speakers	67
School Enrollment	350
Third-Grade Enrollment	152
Change in Stanford 9 (1997-2004)	9.9
Actual-Predicted Stanford 9 (2004)	4.0
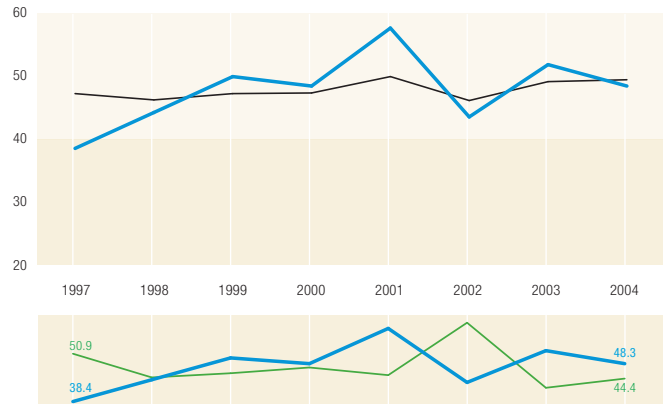
Cordova Primary School: Third-grade reading was not selected because of its erratic annual scores: the sum of the negative values was -18.9, well beyond the 10-point cutoff. In addition, if the 1997 score was not representative, then the improvement was modest.

Wilson Primary School
Third-grade reading

|	Wilson
City	
District	Wilson ESD
School % Latino (1997)	77
School % Latino (2004)	95
School % FRPL (1997)*	99
School % FRPL (2004)	94
School % Spanish Speakers	81
School Enrollment	310
Third-Grade Enrollment	160
Change in Stanford 9 (1997-2004)	9.6
Actual-Predicted Stanford 9 (2004)	1.7
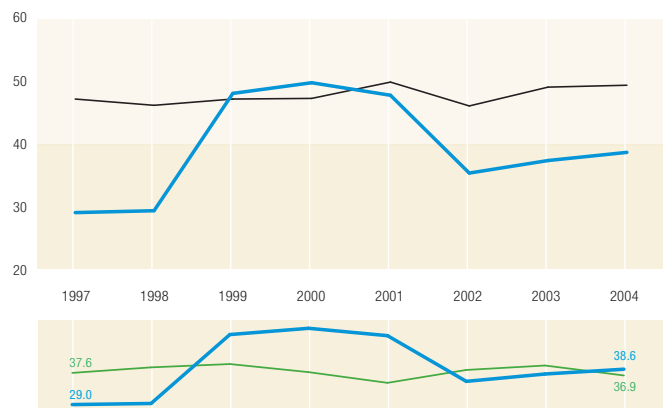
Wilson Primary School: The third grade test scores were erratic, jumping by 19 points between 1998 and 1999, but falling by 12 between 2001 and 2002. So the sum of the negative changes exceeded our criteria. The actual score was barely higher than the predicted score in 2004 (and lower in 2002 and 2003).

Augustus H. Shaw Jr. School
Third-grade reading

	Augustus H. Shaw Jr.
City	
District	Phoenix ESD
School % Latino (1997)	25
School % Latino (2004)	93
School % FRPL (1997)*	98
School % FRPL (2004)	98
School % Spanish Speakers	87
School Enrollment	386
Third-Grade Enrollment	84
Change in Stanford 9 (1997-2004)	3.6
Actual-Predicted Stanford 9 (2004)	7.0
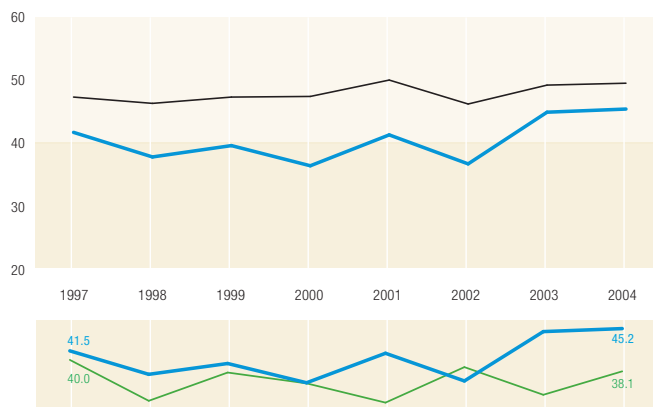
Augustus H. Shaw Jr. School: While the actual-predicted was 7.0 points, the change in third-grade reading Stanford 9 scores over the period was only 3.6. Their scores were up and down over the years and the sum of negative change was -11.7. They had a very positive increase from 2002 to 2003 (8.1), but didn't have any sustained growth over the 1997-2004 time period.

8 The research team did not find a comparison school for Wade Carpenter; its demographics are unique. The team did identify two comparison schools for Phoenix Magnet Traditional but, unfortunately, neither school would respond to the school survey or telephone calls.

9 Sources: Stanford 9 files (spring test takers) for percent Latinos in school and percent of students who speak Spanish at home (% Spanish-speakers); Arizona Department of Education for percent Free and Reduced-Price Lunch (FRPL, a proxy for poverty); October enrollment files, school enrollment. Numbers may look different from other published sources because we use a different version of the Stanford 9 test score, called the Normal Curve Equivalency (NCE), that allows comparison of the same grade over time; we used student-level test-score data to add students with limited English skills into the overall school average; and we used test score files, taken in the spring, to calculate the percent Latino at the time the test was taken, instead of in the fall. Traditional enrollment numbers are reported as "October enrollment."

10 Timeline is based on literature review, interviews with principals and surveys returned from the 12 beat-the-odds schools and comparison schools, and interviews and email exchanges with several Arizona education policy experts, including David Garcia, Arizona State University, Brian Owin, ThinkAZ, and Robert Hess, Arizona State University West.

The research team benefited tremendously from a number of individuals' comments and insights.

Copies of the report can be accessed on the following web sites:

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