



SREB policy brief

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Smart Class-Size Policies for Lean Times

Most states nationwide have had policies for several decades that limit the number of students assigned to public K-12 classrooms. SREB states, led by Tennessee and Texas, spearheaded this effort in the 1980s, and SREB’s own *Legislative Briefings* have marked the growth of class-size policies across the region. The policies became more popular in the 1990s, following Tennessee’s now-famous Student/Teacher Achievement Ratio (Project STAR) experiment. Today, every SREB state has some kind of policy that controls class size.

Supporters argue that smaller classes help raise student achievement, especially in the elementary grades. Critics, on the other hand, argue that the increases are not sufficient to justify the overall state cost. This argument has gained greater support since the economic downturn began in 2007. As a consequence, policy-makers and education leaders in

some states have sought to relax class-size limits in an effort to cut state and local education costs.

While the public largely has supported the limits up to now, the mood may be shifting. A 2011 Gallup poll found that when given a choice between “smaller classes with average-performing teachers” and “larger classes with better-than-average teachers,” the public overwhelmingly chose better teachers over smaller classes.

Policy-makers and education leaders in some SREB states may be considering changes to their class-size policies but want to do so without jeopardizing student achievement. This *SREB Policy Brief* summarizes current policies (often referred to as “class-size reduction policies”) across the region, reviews prominent research on the issue, and offers recommendations on how states might make sensible adjustments.

How do states measure class size?

Class size is generally regulated by *caps* and measured with *averages* — and legislation sometimes limits class size with both. Caps stipulate the maximum number of students legally permitted to enroll in a single class. Averages divide the number of total students in different grade levels by the number of classes in schools (or districts) to determine the size of a typical class.

All SREB states use caps to regulate class size in the early grades. Caps range from a maximum of 18 stu-

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What's the Bottom Line? Key Recommendations for Class-Size Policies

- ◆ States should maintain smaller classes where the research shows academic benefit — pre-K through third grade and for certain groups of students, including students at risk of academic failure.
- ◆ If class size is increased at any grade level, states should require schools to monitor individual student achievement in those grades continuously to reduce the chances of failure.
- ◆ As new measures of teacher effectiveness are implemented, state leaders need to study the relationships between class size, teacher effectiveness and student performance to determine how to adjust class size and leverage academic gains.
- ◆ States need to inform the public about their class-size policies, particularly when they or their legislatures contemplate changing them.

dents per class in Alabama and Florida to 30 students in South Carolina. Five SREB states have legislated averages, ranging from 20 to 28 students, with each statewide average set lower than the cap. Class size has even become one of the standards by which accreditors assess schools for quality. AdvancED, which accredits public schools in 11 SREB states, has incorporated class-size recommendations across pre-K-12 that could guide schools and districts in the absence of state-required class-size requirements. (See AdvancED recommendations and SREB state requirements in the table on Pages 6 and 7).

Caps can be firm or flexible. Schools or districts that fail to meet firm caps face a variety of consequences, including loss of state funding. In states with flexible caps, schools or districts can apply for waivers that permit various exemptions to caps if needed. According to an analysis by the Education Commission of the States, about a third of all states — including 10 SREB states — permit waivers of class-size limitations to provide flexibility to schools having trouble meeting caps or averages, or to those districts attempting to save money under extreme economic strain. Officials in Georgia and Texas, for example, have in recent years approved large numbers of class-size waivers in an effort to help districts hamstrung by rapidly shrinking budgets. (See profiles of Georgia and Texas on Page 8.)

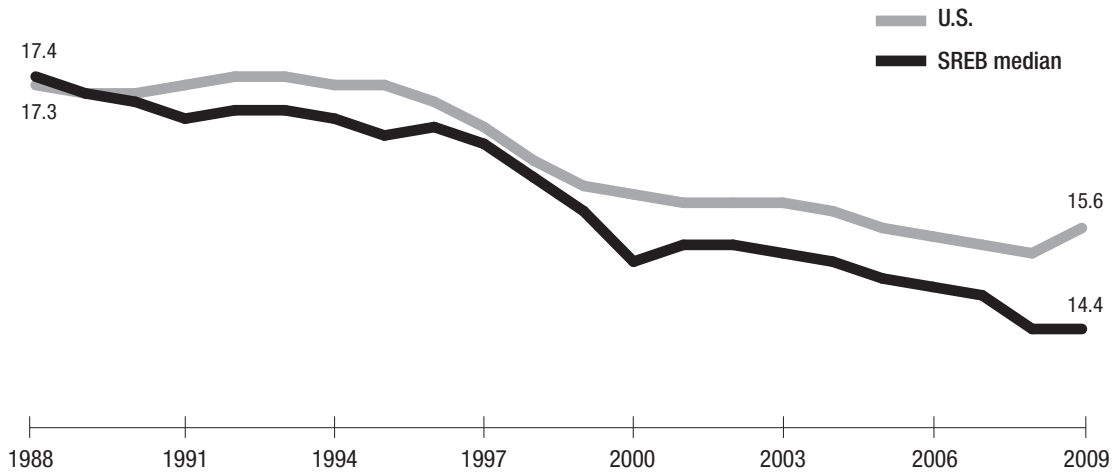
In addition to caps and averages, the National Center for Education Statistics (NCES) publishes a third measure based on information provided by states: the *student-teacher ratio*. Policy-makers use the ratio more to track class size and monitor trends than to limit class size directly in legislation. NCES calculates it for all 50 states, the nation and the largest school districts. Over the past two decades, the U.S. ratio has declined by nearly two students per teacher, suggesting that the implementation of class-size policies in SREB states — and nationwide — has had an impact. (See Figure 1.)

Policy-makers who use the student-teacher ratio to track class size, however, should do so with caution — and not be fooled by its label. “Teacher” does not necessarily mean the primary classroom instructor, a critical difference between the ratio and the true average class-size measure. University of Buffalo researcher Jeremy Finn and Tennessee STAR principal investigator Charles Achilles have pointed out that many states count personnel other than full-time instructors (such as guidance counselors, librarians, paraprofessionals and administrators) in the student-teacher ratio. The result is looser and less rigorous than the strict average calculation. Relying on the ratio as the *primary* measure of class size may give a false impression that classes are much smaller than they really are, particularly in schools with higher-than-average numbers of auxiliary personnel.

Figure 1

Public K-12 Student-Teacher Ratio in the Nation and SREB States, 1988 to 2009

Class sizes have declined and are smaller in the South.



Source: National Center for Education Statistics.

How does class size affect achievement?

Researchers have tried — in two broad ways — to understand how changes in class size impact student performance: by analyzing historical data and by conducting randomized experiments. The first type is more common. In historical analyses, researchers look for instances in which class size impacts student performance in meaningful ways. Using this method, they have found that students in smaller classes tend to outperform their peers in larger classes, especially in kindergarten through third grade. In a large study of Texas classrooms, prominent economist and education scholar Eric Hanushek and his colleagues found that smaller classes even yielded academic gains for students in the fourth and fifth grades.

While research based on historical data is important, the randomized experiment is the gold standard, yielding much more valuable information because it can actually isolate whether class size affects student performance. Students are first *selected* for the study by chance and then *assigned* to various study treatments by chance, ensuring that researchers can identify the causes for any performance changes they detect. In a randomized study, if students in smaller classes outperform their peers in larger classes on a standardized assessment, class size can be said to make the difference.

One randomized study stands out. At the request of the Tennessee Legislature, the state Department of Education launched the Student/Teacher Achieve-

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ment Ratio (Project STAR) experiment in 1989 specifically to determine the impact of smaller classes on student achievement. Today, it is still considered the seminal research study on class size. The STAR organizers randomly selected more than 7,000 students from 79 Tennessee elementary schools. They assigned some students to classrooms ranging from 13 to 17 students per teacher, some to classrooms ranging from 22 to 25 students per teacher, and some to regular-sized classrooms that had a teacher's aide in addition to the full-time classroom teacher. The results revealed that **students placed in small classrooms performed better than their peers in larger classrooms** on both the Stanford Achievement Test and Tennessee Basic Skills First Test across all grade levels tested and all geographic regions. Moreover, findings showed that the sooner students were placed in smaller classes — even as early as kindergarten — the better they performed on third-grade assessments.

A 1999 analysis of STAR data by Princeton economist Alan Krueger revealed similar results that are statistically significant. Krueger concluded that student performance on the standardized tests increased on average by about 4 percentile points in the first year students were assigned to small classes, regardless of the grade in which the student first attended a small class. He also concluded that student performance increased by about 1 percentile point *per year* for students in small classes compared with those in regular-size classes, and that class size has a larger effect on test scores for minority students and for those eligible for the free and reduced-price meal program. These are important gains that show the power of smaller classes.

Years later in 2008, economists Joshua Angrist (Massachusetts Institute of Technology) and Jörn-Steffen Pischke (The London School of Economics and Political Science) still recognized the STAR

study as “unusually ambitious and influential,” with results that “point to a strong and lasting payoff to smaller classes.”

A similarly ambitious class-size reduction effort followed Tennessee's project. The Student Achievement Guarantee in Education (SAGE) program was launched in Wisconsin in the 1996-1997 school year. The Wisconsin Center for Education Research has since evaluated SAGE and found results that mirrored those in Tennessee. Students from three separate cohorts who began first grade in smaller classes made sustained progress through the third grade that exceeded that of their peers who were placed in larger classes in first grade. **The strongest gains** — especially for black males — occurred in reading, language arts and mathematics for the first-graders in small classes.

But what about the effects of smaller classes in the early grades on high school graduation, college enrollment and degree attainment? Following students through the long educational pipeline is difficult; tracking and recording the size of classes to which students are assigned along the way has been nearly impossible, particularly without statewide longitudinal data systems. Yet follow-up research from the Tennessee STAR project provides clues.

In a 2005 analysis of STAR data, Finn and his colleagues found that students who had been in smaller classes for all four years of the STAR experiment were **80 percent more likely to graduate** from high school than their peers in larger classes. They also found that students from low-income families who spent three years in smaller classes in the early grades were 67 percent more likely to graduate from high school than their peers in larger classes, and this likelihood doubled if they spent a fourth year in smaller classes.

If class-size policies work, why adjust them?

The answer is because reducing class size — and keeping classes small — statewide is an expensive proposition. Reasonable estimates suggest that it may be one of the most expensive single education initiatives states undertake.

Scholars at the both the RAND Corporation and the Brookings Institution estimate that shrinking average class size by even one student would cost the nation more than \$10 billion per year. In Florida alone, implementing a statewide class-size reduction policy has cost nearly \$22 billion over a nine-year period — about \$2.4 billion annually, on average. (See Figure 2 on Page 8.)

Some researchers think states and districts are better off devoting limited state resources to other education reforms. Eric Hanushek has argued that instead of placing limits on class size, policy-makers should create incentives that lead to improved teacher performance and expanding school choice options for families. Scholars from Florida International University concluded in a 2006 analysis that increasing the percentage of staff devoted to instruction, hiring more teachers with advanced degrees, and increasing teacher pay could yield the same increases as smaller classes on Florida Comprehensive Assessment Test scores.

Policy-makers and education leaders across the SREB region need to determine if reducing class size is a cost-effective means to improve student performance in their individual states. Reflecting these issues, multiple states across the nation have altered their class-size policies with a variety of approaches. Here's how three SREB states recently sought to adjust their class-size policies in different ways.

Florida adjusted the list of core courses.

Florida's class-size reduction policy (approved in 2002 by a citizen-initiated constitutional amendment) was first implemented in the 2003-2004 school year. The amendment called for class-size caps. It was implemented through a stepped plan to reduce class sizes to caps ranging from 18 students in the early grades to 25 in high school by 2011. It was designed to reduce the number of students in each classroom by two until districts met the class-size caps by 2011. In the first three years of implementation, districts were required to report average class size as a preliminary step to schools' reporting averages during the following four years. This method of reporting gave districts and schools time to prepare for meeting caps at the individual classroom level in 2011. By this time, district class-size averages fell well below caps set for these grade levels, suggesting the districts had met the policy's broad goals. A Florida legislative report in 2011 revealed that at the district level:

- The class-size average in kindergarten through grade three was approximately 15.5 students, about 2.5 students below the designated cap.
- The class-size average in grades four through eight was about 18 students, about four students below the designated cap.
- The class-size average in grades nine through 12 was about 20.5 students, about 4.5 students below the designated cap.

In recent years, some legislators in Florida have sought to revise the state's 2002 policy to reduce costs. An effort to relax current class-size caps most recently appeared as a legislatively initiated constitutional amendment in 2010. The measure, which would have replaced "maximum" class size (or caps) with "average" class size — a looser distinction — fell short of the required 60 percent voter support

Class Caps and Averages by Grade-Level Ranges in SREB States

Every SREB state has a cap and/or average in at least two grade levels.

	Pre-K (3-year-olds)	Pre-K (4-year-olds)	Kindergarten	Grades 1-3	Grades 4-6	Grades 7-8	Grades 9-12	
AdvancED Cap Recommendations¹	12	12	18	20	22: grades 4-5; 25: grade 6	25	25	AdvancED Cap Recommendations¹
Alabama (1998)	—	Cap: 20	Cap: 18	Cap: 18	Cap: 26	Cap: 29 / 750 per week	Cap: 29 / 750 per week	Alabama (1998)
Arkansas	Average: 10, or 20 with an aide	—	Average: 20, or 22 with an aide	Average: 23, Cap: 25	Average: 25, Cap: 28	Cap: 30	Cap: 30	Arkansas
Delaware	—	Cap: 20	Cap: 22	Cap: 22	—	—	—	Delaware
Florida	—	Cap: 18, Cap: 12 (summer only)	Cap: 18	Cap: 18	Cap: 22	Cap: 22	Cap: 25	Florida
Georgia²	—	Cap: 20	Cap: 18, or 20 with an aide	Cap: 21	Cap: 28	Cap: 28	Cap: 35	Georgia²
Kentucky	Cap: 20	Cap: 20	Cap: 24	Cap: 24	Cap: 28 in grade 4 29 in grades 5-6	Cap: 31	Cap: 31	Kentucky
Louisiana	—	Cap: 20	Cap: 20	Cap: 20	—	—	—	Louisiana
Maryland	—	Average: 20, or 10 with no fewer than two unspecified staff	—	Cap: 20, in grades 1-2 reading	—	—	—	Maryland
Mississippi	No program	No program	Cap: 22, or Cap: 27 with an aide	Cap: 27	Cap: 27	Cap: 33	Cap: 33	Mississippi
North Carolina	—	Cap: 18	Cap: 24	Cap: 24	—	—	—	North Carolina
Oklahoma	—	Cap: 20	Cap: 20	Cap: 20	Cap: 20	—	—	Oklahoma
South Carolina	Cap: 20	Cap: 20	Cap: 30, Average: 28	Cap: 30, Average: 28	Cap: 30, ELA and math Cap: 35 for other subjects Average: 28	Cap: 35	Cap: 35	South Carolina
Tennessee	Cap: 16	Cap: 20	Average: 20	Average: 20, Cap: 25	Average: 25, Cap: 30	Average: 30, Cap: 35	Average: 30, Cap: 35	Tennessee
Texas	No cap	No cap	Cap: 22, Average: 20	Cap: 22, Average: 20	Cap: 22 in grade 4, Average: 20	—	—	Texas
Virginia	—	Cap: 18	Average: 24, Cap: 29	Average: 24, Cap: 30	Average: 25, Cap: 35	Average: 24 for English courses	Average 24 for English courses	Virginia
West Virginia	Average: 10, Cap: 20	Average: 10, Cap: 20	Cap: 20	Cap: 25	Cap: 25	—	—	West Virginia

Note: “—” indicates no class-size caps or averages specified.

¹ AdvancED, the accrediting association for U.S. public elementary and secondary schools, recommends these class sizes in the absence of state class-size requirements. These practices assume a minimum of one full-time-equivalent teacher in each of the class sizes noted. The Southern Association of Colleges and Schools Council on Accreditation and School Improvement (SACS CASI) is an accreditation division of AdvancEd.

² Georgia provided statewide waivers to its class-size requirements for the 2009-2010, 2010-2011 and 2011-2012 school years.

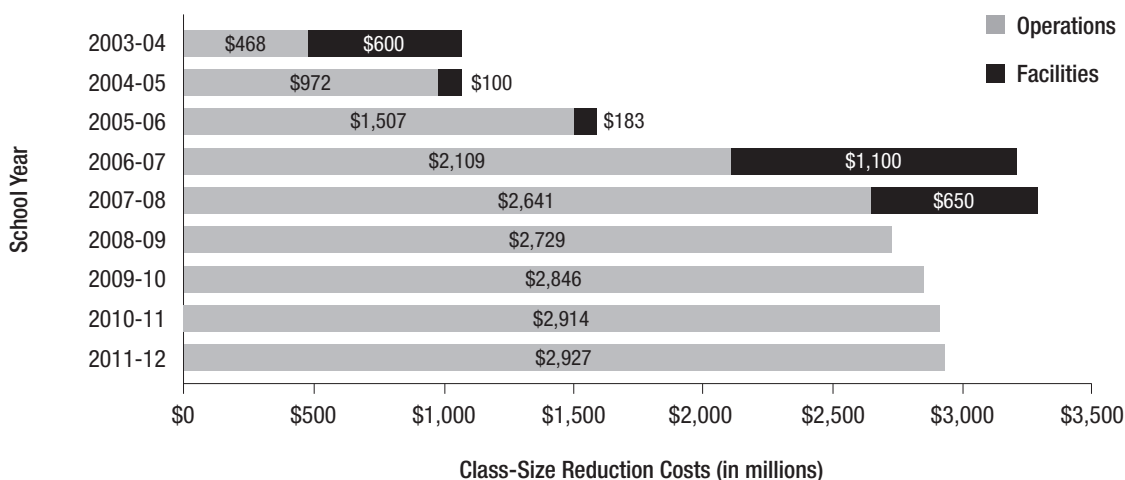
Sources: State departments of education, state boards of education, state legislative code, the National Institute for Early Education Research, and AdvancED.

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Figure 2

Costs of Class-Size Reduction Implementation in Florida

Florida has appropriated nearly \$22 billion since its 2002 constitutional amendment reduced class size.



Source: Florida House of Representatives, Final Bill Analysis, SB 2120.

needed to pass. Following the defeat, the state Legislature changed strategy and effectively relaxed class-size requirements by reducing the number of core academic courses subject to caps — from about 850 to about 300. Now, the 300 courses classified as core courses can increase in class size by three students in kindergarten through grade three and by five students in grades four through 12, provided those students enrolled in school after the October student membership survey.

Georgia offered waivers.

Georgia’s current class-size policy, signed by Governor Sonny Perdue in 2006, establishes a cap of 18 students in kindergarten classrooms and 21 in grades one through three. As budget pressures increased in fall 2008, Perdue asked the state Board of Education to grant districts any class-size waiver requests it considered “reasonable” for the 2008-2009 and 2009-2010 school years. Then-State School Superintendent Kathy Cox followed up with her own letter to the state Board of Education request-

ing that it waive class-size limits statewide for the 2009-2010 school year — noting that increasing class size could save the state and local school districts \$200 million. In response, the state Board approved a statewide class-size waiver for the 2009-2010 school year that it monitors annually. The statewide waiver has been renewed by the Board each year since and now extends through the 2012-2013 school year.

Texas sought to move from caps to averages.

Texas established one of the nation’s first class-size reduction policies, setting limits on what it termed “student-teacher ratios” in 1975 and establishing caps in 1984. The state’s limits have remained consistent in the decades since. In 2009 in House Bill 3, the state Legislature directed the state comptroller to study “resource allocations” in relationship to “achievement” and “cost effectiveness” in Texas’ schools and colleges. In response, the comptroller’s office created the Financial Allocation Study for Texas (FAST). In a 2010 report, FAST recom-

mended — with respect to K-12 class size — that the state replace its 22-student cap with a 22-student average to ease state- and district-level budgetary pressures. In 2011, a House bill including a proposal to increase class-size limits from 22 to 25 — as a cost-saving measure — got some traction but did not pass. Since then, *The Dallas Morning News* reported that through state waivers for the 2011-2012 school year, state officials have allowed public school districts to exceed the 22-student cap in 6,988 classrooms from kindergarten through

fourth grade — up from 2,238 classrooms the prior school year.

Clearly, Florida's reclassification of courses from core to non-core, Georgia's use of statewide waivers, and Texas' attempts (though unsuccessful) to rewrite legislation with class-size averages instead of caps show that these states sought relief or flexibility in their class-size policies — all in the wake of economic hardship — so their districts could meet extreme budget constraints.

What adjustments are reasonable, and what research is needed?

While adjusting class size should be mostly about student performance, other variables are also at stake. State leaders who are considering relaxing their class-size policies should use the state's student performance data and the state's fiscal situation to guide their decisions. They also need to factor in the effectiveness of classroom teachers in the state — and their own ability to assess it accurately. They need to monitor the effect of any changes they make on student performance. They also need to keep the public informed about changes they contemplate and implement — and the effects they have.

Reasonable practice for making changes in class-size policies can be based on a state's record of student performance and its current fiscal condition.

- States with weak student performance in the early grades should maintain their caps, or lower them *if* they are higher than average.
- On the other hand, financially constrained states that already have low class-size caps and average or above-average student performance *could* consider relaxing caps at the high school level, while retaining caps in the early grades.
- States satisfied with their policies could allow temporary waivers to class-size caps and then monitor results.

State departments of education in most SREB states can already issue waivers to school districts in cer-

tain circumstances to raise class-size caps. States that have not built this flexibility into their policies should consider doing so — with adequate guidance for monitoring student achievement and with provisions for withdrawing the waivers. States should **ensure these waiver permissions are flexible** enough to meet state needs and that education leaders are accountable for using them effectively.

As states develop and enhance longitudinal data systems, state leaders also have an unprecedented opportunity to learn more about the link between student achievement, class size and teacher effectiveness. Already, scholars have begun to develop new comprehensive models of teacher effectiveness linked to student performance. States need to launch studies, using their new data systems, to determine what the optimum combinations are when considering teacher effectiveness, class size, cost and student performance.

Many SREB states are poised to launch new measures of teacher effectiveness. As the knowledge about how to best measure teacher effectiveness grows, research teams in state departments of education and local districts should **link these findings with class-size and student performance data**. Despite the high cost of conducting rigorous experiments such as Tennessee's STAR and Wisconsin's SAGE, state and district leaders and policy-makers need to know more clearly what makes a difference.

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States also need to monitor any changes they make in student performance after they implement changes in class size. Noted researcher Peter Blatchford found — through monitoring elementary and secondary student performance and engagement — that adding five students to a class decreased the odds of students' being on task by nearly one-quarter. In fact, the study also found that low-attaining students were nearly twice as likely to be disengaged in classes of 30 students as they were in classes of 15.

State departments of education need to inform the public about their class-size policies, particularly when they or their legislatures contemplate changing them. They should publish information openly on

department websites. Florida does a good job of publishing its policy details on its websites, as well as costs related to class size — including both staffing and facility costs. Florida's policy research arm also has issued reports on costs, and these are readily available online. All SREB states should follow suit. (See www.fldoe.org.)

Right now, the answers are not definite on how to spend precious state resources for the highest return on investment. But research does show state leaders where spending class-size dollars makes a big difference — the early grades, particularly among students from low-income families. Clearly, there are limits on how big classes should be, and the research provides a guide to class size that makes a difference.

Conclusion

Some policy-makers and education leaders may be tempted to increase class size to cut costs. If cost cutting is the only goal, they should focus on the point in the K-12 pipeline where class-size reduction has not yet proven necessary to support academic performance — high school.

Research clearly shows that students benefit most from smaller classes in the early grades, especially kindergarten through grade three. U.S. Secretary of Education Arne Duncan has even weighed in on this point, arguing that if states do decide to relax class-size policies to save money, they should do so in high schools, not the early grades.

The following recommendations can help policy-makers move toward smart class-size policies:

- **Maintain rigorous and enforceable class-size policies in the early grades:** *Policy-makers and education leaders should resist the urge to relax small-class policies for early grades students, even when budgets are tight.*

Tennessee's highly regarded class-size experiment demonstrated that young students in smaller classes generally outperform their peers in larger ones. This was especially true for black students and students from low-income families. A large body of research followed this experiment, and some studies showed that smaller classes and higher achievement among early grades students were factors that contributed to high school graduation.

- **Monitor individual student achievement and engagement:** *Policy-makers and education leaders should insist that schools, districts and the state monitor individual student performance and behavior in grades where class sizes are increased, to prevent increased student failure that could result from larger classes.*

States should commit to follow-up research whenever they alter their class-size policies to ensure their students are not affected adversely. If increases are needed, the best approach is stepwise, incremental change rather than a large, one-step increase. It should be coupled with continuous monitoring of

student achievement and engagement so that states can determine at what point class-size increases undermine student performance.

- **Add teacher effectiveness to studies of class size:** *States should undertake studies of the relationship of class size and teacher effectiveness on student achievement.*

New measures of teacher effectiveness are currently emerging in education research, and many SREB states are incorporating them into their teacher assessment efforts. It appears that states will be able to distinguish “better-than-average” teachers from the rest, using measures validated by research. If they can, they will also be able to link their class-size policies to their teacher assessment efforts — and they should collect and analyze the data in tandem. No matter how they decide to use the information — whether or not to pay effective teachers for teaching larger classes, for example — states need to know, through research, how the two variables (class size and teacher effectiveness) are related.

At times, recent debates on class size have been confusing and emotional, particularly for the public. Some arguments have drawn overly simplistic battle lines between fiscal responsibility and the student-oriented advocates of various policy options. States ultimately need to make decisions based on their current fiscal health, their current class-size policies, their own research evidence about student achievement, and the large body of available class-size research. At the same time, states need to be transparent with the public about class-size changes they are considering.

Policy-makers and leaders who elect to adjust class-size policies in the current lean economy should proceed carefully, basing change on research about the impact it will have on student achievement, considering teacher effectiveness and other issues — and encouraging more research to become available. Class size does matter, and some class-size policies are smarter than others.

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