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The Impact of Class Size on Student Achievement with Accelerated Interventions

In this report, Hanover Research addresses the impact that class size can have on student achievement in accelerated academic intervention programs. First, we evaluate the relationship between class size and student performance. Next, we present data on class size in comparable programs as provided by the state education departments of all fifty states.

Introduction

Class-size reduction (CSR) initiatives have been a staple of education reform for several decades. Although CSR is a prominent subject in K-12 school improvement, **high-quality, evidenced-based studies are difficult to find**. According to the Brookings Institute Brown Center on Education Policy:[1]

> The most credible studies of CSR have utilized either randomized experiments, in which students and teachers are randomly assigned to smaller or larger classes; natural experiments in which, for example, a sudden change in class size policy allows a before-and-after analysis of its effects; or sophisticated mathematical models for estimating effects that take advantage of longitudinal data on individual students, teachers, and schools.

The following report explores the research on class size reduction and student achievement, despite the limitations apparent in the research. As will be demonstrated in this report, past research has supported all possible standpoints: that CSR improves student performance, that CSR can either improve performance or have no effect, and that CSR has absolutely no effect on student performance.

Report Overview

- **Section One: Class Size and Student Achievement**
  The first section reviews the available literature focused on the relationship between class size and student achievement. Most studies consider this relationship in the context of a traditional elementary school classroom.
- **Section Two: Class Size in Academic Intervention Programs**
  The second section presents information on class size in academic intervention programs, as mandated by the fifty state education departments. All programs use the Response to Intervention framework.

Key Findings

- Available studies on the impact of class size on student achievement generally evaluate traditional classrooms in elementary school settings. Hanover did not find any studies specifically addressing either the accelerated instruction model used in Texas public schools or a comparable program in any other state or district.
- Overall, the idea of reducing class size is popular. Most associate smaller

[1] Whitehurst, G. et al. "Class Size: What Research Says and What it Means for State Policy." Brown Center on Education Policy, Brookings Institution, May 11, 2011. http://www.brookings.edu/~/media/Files/rc/papers/2011/0511_class_size_whitehurst_chingos/0511_class_size_whitehurst_chingos.pdf

classes with more personalized attention, which leads to better student learning. Additionally, there is some benefit to CSR in that stakeholders can "see" the intervention in real time—a parent or administrator walks into a classroom and can immediately recognize an improvement in terms of the number of students seated.

- If research on the topic of class size reduction can agree on one conclusion, it is that there is no reason to expect consistent improved student performance under a CSR policy. Some research finds positive outcomes, and some finds statistically insignificant differences in student performance between large and small classes.

- Unfortunately, the body of research undertaken on the topic has been highly criticized for flawed methodologies. The most notable flaw in past research studies has been disregard for the impact of other student variables, such as income level, in student achievement. Also problematic is the lack of research comparing CSR directly to other interventions, in order to determine what the *more* effective strategy may be.

  Research indicates that class size has the greatest impact on student achievement when classes are reduced to about 15 students. Research does not evaluate the impact of smaller classes. However, research has determined that minor decreases in class size, for example, reducing a class from 24 to 23 students, do *not* affect student achievement.

- Among states specifying the maximum number of students which may be instructed in a single group in an academic intervention program, **Texas has the highest ratio at one teacher per ten students.** With the exception of Arizona, which allows up to seven students in a single group, no other state allows more than six students per group at the Tier II level under a Response to Intervention framework.

Section One: Class Size and Student Achievement

Led by the belief that smaller classes necessarily precede increases in student learning, for years, states mandated or incentivized class size reduction (CSR) initiatives in their public schools. Many still do. However, the cost of maintaining small classrooms in a time of budget constraints has not gone unnoticed. **Class size is one of few variables which can both impact student learning and be mandated through policy**, making it an attractive topic for exploration. Additionally, class size reduction initiatives can serve to pacify the desire to see efforts to increase student learning in action, whether or not they actually produce measurable results. As a *New York Times* article states, the obsession with class size stems from a desire for "something that people can grasp easily—you walk into a class and you see exactly how many kids are there."[2]

While class size reduction studies have always produced somewhat ambiguous results, CSR policy has begun to attract more vocal critics from academia and the policy world in recent years.[3] Despite this, **smaller class size remains a popular concept with many teachers and parents**. According to a survey conducted by the American Federation of Teachers, parents considered class size second in importance only to school safety.[4] In fact, a 2007 poll indicated that 77 percent of Americans would rather spend educational dollars on class size reduction than on higher teacher salaries.[5]

Eric Hanushek, an economist at the University of Rochester, has published numerous articles in which he finds that few "school inputs"—student-teacher ratios, spending per student, teacher education, teacher experience, and teacher pay—ultimately have an effect on student performance as measured by test scores.[6] His conclusions are reached after a statistical analysis of data from numerous studies by various researchers, and are well-respected due to the breadth of his coverage. However, it is important to note that Hanushek does not believe that school inputs never produce an effect in the classroom, just that **there is no reason to *expect* consistent improved student performance by tweaking school inputs**.[7]

This conclusion, of course, has been disputed by other researchers. David Card and Alan Krueger sought to qualify Hanushek's conclusions, accepting the broad premise

[2] Medina, Jennifer. "Class Size in New York City Schools Rises, but the Impact is Debated." *New York Times,* 21 Feb 09. http://www.nytimes.com/2009/02/22/education/22class.html
[3] Sparks, S. "Class Sizes Show Signs of Growing." *Education Week*, Dec. 31, 2011. http://www.edweek.org/ew/articles/2010/11/24/13size_ep.h30.html
[4] Dillon, S. "Tight Budgets Mean Squeeze in Classrooms." *The New York Times*, Mar. 6, 2011. http://www.nytimes.com/2011/03/07/education/07classrooms.html?pagewanted=all
[5] Chingos, M. April 2011. "The False Promise of Class-Size Reduction." Center for American Progress, p. 1. http://www.americanprogress.org/issues/2011/04/pdf/class_size.pdf
[6] Ibid.
[7] Ibid.

("class size reduction does not independently work to increase student achievement across the board"), but refuting its application to all cases. Card and Krueger maintain that there are significant advantages to be realized by maintaining small (<15) classes in the early grades, and that class size reduction would have definite positive impact should it be targeted towards those populations shown to benefit from it, particularly schools in high-poverty districts.[8]

It is important to note that no commentators reach the conclusion that increasing class sizes will lead to improved student performance, save for possibly in the very upper grades of secondary schooling. However, **participation in moderately-sized classes (20-25 students) is not shown to detrimentally affect students in and of itself**. In fact, it is argued that it is not until class sizes reach the 30s that students suffer the effects of a large class, just as reduction in size does not necessarily bring positive outcomes unless it takes sizes down to below 15:

> Reducing class sizes from the 30s to the 20s is in the right direction, but there is little support for the claim that there are increases in achievement or satisfaction, or teacher attitude or morale. Only when the class size reduces to 15 or below are there appreciable benefits.[9]

Despite mixed evidence, school districts across the nation have sought to reduce class sizes in an effort to improve student achievement, an initiative fully supported by the federal government. By 2000, federal funding for class size reduction initiatives had reached $1.3 billion.[10] Under the Bush administration, federal class size reduction initiatives were embedded into Title II of the No Child Left Behind Act, and "by embedding CSR into this provision, NCLB establishes that aiming at teacher quality supersedes the intent to reduce class size."[11] **Federal policy has begun to deemphasize class size reduction as an across-the-board policy**.

A Review of the Literature

The most influential and credible study of class size reduction initiatives is the Student Teacher Achievement Ratio (STAR) study, conducted in the late 1980s. Project STAR is frequently cited as a landmark study in CSR research and, as such, is credited with much of the national widespread push in class size reduction that followed its popularization. The longitudinal study followed two groups of students consisting of small classes sized 13 to 17 students and large classes sized 22 to 26 students. Project STAR is unique for being both large-scale and randomized—two

[8] Card, David and Alan B. Krueger. "School Resources and Student Outcomes: An Overview of the Literature and New Evidence from North and South Carolina." *The Journal of Economic Perspectives*, Autumn 1996, 10.4. p. 31-50. http://davidcard.berkeley.edu/papers/school-resources-outcomes.pdf

[9] "The School Class Size Debate." *op. cit.*

[10] Milesi, Carolina and Adam Gamoran. "Effects of Class Size and Instruction on Kindergarten Achievement." *Educational Evaluation and Policy Analysis*, Winter 2006, 28.4. p 287-313.

[11] Ibid.

characteristics which are considered the gold standard in social science research. **Students in the smaller classes saw larger test score gains in reading and mathematics compared to the larger classes**. This effect was most noticeable for minorities and low-income students.[12] The impact of smaller classes demonstrated by STAR has been cited in favor of the model: student gains in achievement remained the equivalent of three additional months of schooling by four years out after a reduction in class size of 7 to 10 students.[13] It is important to note that, in order to see the benefit, **class sizes must fall to at or below 15 students**, when compared with an average class size of 24 students. Most research agrees that **slight class size reductions bear no measurable benefit for students**.

Other initiatives have followed Project STAR, such as the SAGE (Student Achievement Guarantee in Education) program, which began in Wisconsin in 1996, limiting K-3 class sizes to 15 students. The program originally targeted high-poverty schools and districts, though it now allows any school to participate.[14] Also in 1996, California implemented an ambitious, statewide program of class size reduction that sought to bring down K-3 class sizes to no more than 20 students.

Unfortunately, most studies of the impact of class size reduction on student achievement have since been challenged on the basis of a flawed methodology. In the case of the California class size reduction program, researchers question the data constraints (choice of measurement of achievement and lack of baseline standardized test data) within the study, as well as a lack of "evidence on the effect of CSR as compared to equivalent additional resources." Accordingly, Chingos argues that **these shortcomings limit the validity of the claims of the research**.[15]

The California study had found that the effect of a small class size could overcome the negative impact an inexperienced teacher had on classroom learning. While the research indicates that student achievement in the early grades increased for all demographics, a corresponding finding was that the policy simultaneously **led to a decrease in teacher quality** in the initial years of official implementation.[16] The decrease in class size required statewide hiring of some 25,000 new teachers during the first years of operation. Many of these teachers did not have traditional

[12] Chingos, Matthew. "The False Promise of Class-Size Reduction." April 2011. Op. cit., p. 5.
[13] Whitehurst, Grover and Matthew Chingos. "Class Size: What Research Says and What it Means for Policy." Brown Center on Education Policy. 11 May 2011. http://www.brookings.edu/~/media/Files/rc/papers/2011/0511_class_size_whitehurst_chingos/0511_class_size_whitehurst_chingos.pdf
[14] "SAGE Frequently Asked Questions," Wisconsin Department of Public Instruction. http://dpi.wi.gov/sage/faq.html
[15] Chingos, M. August 2010. "The Impact of a Universal Class-Size Reduction Policy: Evidence from Florida's Statewide Mandate." Program on Education Policy and Governance Working Papers Series, John F. Kennedy School of Government, Harvard University, p. 3. http://www.hks.harvard.edu/pepg/PDF/Papers/PEPG10-03_Chingos.pdf
[16] Jespen, C. and Rivkin, S. Winter 2009. "Class Reduction and Student Achievement: The Potential Tradeoff between Teacher Quality and Class Size." *The Journal of Human Resources*, 44:1, pp. 223-250.

certification or were inexperienced in the profession. The study revealed that "a first-year teacher as opposed to a teacher with at least two years of experience reduced achievement by an average of 0.10 and 0.07 standard deviations in mathematics and reading, respectively, almost identical to the benefit of the smaller classes."[17] However, this effect was largely limited to the initial years of the implementation of the program. The doubt that has been cast on the results of this study is unfortunate, as the California project was one of few large-scale projects to find clear positive correlations between class size and student achievement, aside from STAR.

However, not all outcomes of the California study clearly demonstrated a positive correlation between achievement and class size. Students in five of the six participating districts fared better on standardized tests upon experiencing smaller classes for one to three years. However, the sixth district saw its students decline in achievement on standardized tests over the same period.[18] **This disparity indicates that other factors are at play** in influencing students' performance on tests (e.g., income level).

The American Federation of Teachers supports class size reduction initiatives, stating that the primary benefit of smaller class sizes is the increased opportunity for teacher-student interaction. This allows teachers to recognize the needs of individual students and customize instruction and assignments, get to know students better, and keep students on task.[19] Certainly, such occurrences are facilitated in classrooms with fewer students. However, **a definitive causal effect has not been adequately demonstrated** between such perceived benefits to the classroom and improved student outcomes.

Part of the challenge in determining the effect of class size on student achievement is the **lack of measurable indicators** relevant to the case. Student performance is routinely measured by standardized test scores, teacher feedback, future school completion, or job achievement. However, it would be erroneous to state that a child receiving a top-ranking score on the SAT in his junior year performed well because in third grade he was placed in a class with only 13 peers. In fact, it is a widely (though not universally) held belief that "larger classes have little effect on overall achievement when traditional achievement tests are used as measuring tools."[20] Card and Krueger hold that "test scores are inappropriate as an outcome measure, as their explanatory power is very limited, and test scores do not adequately reflect the value of school outputs."[21]

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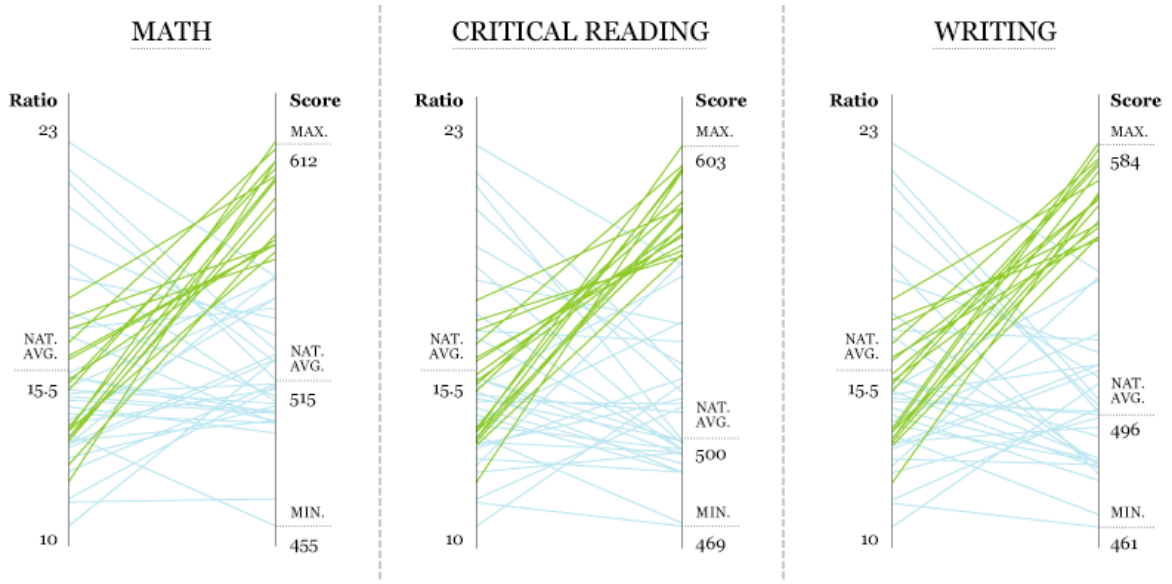
[17] Ibid.
[18] "Not All School Districts Benefit from Class Size Reduction." Op. cit.
[19] "Benefits of Small Class Size." American Federation of Teachers. http://www.aft.org/topics/classsize/
[20] "Teaching Large Classes." Australian University Teaching Committee. http://www.ppic.org/main/pressrelease.asp?i=277
[21] Card, David and Alan Krueger. "School Resources and Student Outcomes: An Overview of the Literature and New Evidence from North and South Carolina." Working Paper #366, Industrial Relations Section, Princeton University. July 1996. http://irs.princeton.edu/pubs/pdfs/366.pdf

There does appear to be some limited correlation between class size and standardized test performance. According to data from the National Center for Education Statistics, **states with lower student-teacher ratios have higher SAT scores in math, critical reading, and writing**. States with higher student-teacher ratios on the other hand, are about on par with the national average in SAT scores. As analysts of these statistics note, "Maine, for example, has the second lowest ratio in the country, but also averages some of the lowest scores. On the other hand, Utah has the highest ratio, but scores well above the national average on all SAT sections."[22] Low student-teacher ratios do not necessarily lead to better scores, nor do high ratios mean low scores. These results indicate that the student-to-teacher ratio cannot be the only factor contributing to student achievement but nevertheless has some noticeable correlation with student success.[23]

Figure 1: State Student-to-Teacher Ratios and SAT Scores



Source: FlowingData with data from National Center for Education Statistics

Despite the findings from such large-scale research initiatives, there are still others which hold that it is not the case that class size correlates with student achievement. One study considered the outcomes of a statewide class size reduction effort in Minnesota's elementary schools. The Minnesota Department of Education has collected data on student enrollment, performance, and basic demographic characteristics such as race, gender, and English proficiency since the 1988-1989

[22] Levitt, Stephen D. et al. September 2011. "The Impact on Short-Term Incentives on Student Performance." University of Chicago. http://flowingdata.com/2009/11/10/do-we-need-more-teachers/sat-scores/

[23] Most studies focus on class-size as a measure for correlation with student achievement. However, in some cases, pupil-to-teacher ratio (PTR) is still used. For example, the Wisconsin SAGE (Student Achievement Guarantee in Education) program uses PTR as one method to achieve acceptable class size.

school year. A study undertaken by researchers at the University of Minnesota found that there was very **little difference in standardized test scores between students in small or large classes** (as defined by falling below or above the state median class size), in either 3rd or 5th grade.[24] The researchers admit that such a simple comparison is insufficient, as other variables exist between schools which impact student achievement. However, upon performing a multiple regression analysis, it was still found that differences in student achievement were statistically insignificant.[25] No statistically significant effects were noted, either, when examining achievement for particular groups of students such as minorities or those of low income families.[26] A summary of the study's findings can be found in Figure 2 below.[27]

Figure 2: Class Size and Student Performance on Standardized Tests

Grade	Subject	Average Test Score by Class Size Grouping		
		Bottom Third	Middle Third	Top Third
Grade 3	Math	1509.2	1517.5	1507.7
	Reading	1497.0	1508.6	1495.9
Grade 5	Math	1504.3	1510.1	1523.6
	Reading	1541.0	1548.0	1559.2
	Writing	1556.2	1518.3	1548.0

The cutoff class sizes are 21.0 and 24.5 students for 3rd grade, and 22.8 and 26.5 for 5th grade. Class sizes less than 10 or larger than 40 were excluded.

The authors' main conclusion was that **a reduction in class size of ten students can "increase students' test scores by .04 to .05 standard deviations"** which is considered minimal. The unexpectedly small positive benefits, especially given the particularly large reduction in class size usually considered at or above the "threshold" for effectiveness may be due to a disproportionate number of higher income students in Minnesota (lower income students tend to benefit more from smaller class sizes).[28]

Similar results were found in a study of Florida's statewide class size reduction mandate, in that **no appreciable differences in student achievement were identified** as a result of the policy. Florida has the strictest and most far reaching class size caps of any states and costs have reached $3 billion a year (spent on teacher salaries and classrooms) to implement.[29] State legislation caps class sizes for pre-kindergarten through third grade at 18, for fourth through eighth grade at 22, and for

[24] Cho, Hyunkuk, Paul Glewwe, and Melissa Whitler. "Do Reductions in Class Size Raise Students' Test Scores?" University of Minnesota. June 2010. p. 18. http://faculty.apec.umn.edu/pglewwe/documents/MNclasz3.pdf
[25] Ibid. p. 20.
[26] Ibid. p. 22.
[27] Ibid. p. 37.
[28] Ibid.
[29] McNeil, M. "Leaner Class Sizes Add Fiscal Stress to Florida Districts." *Education Week*, Feb, 19, 2008. http://www.edweek.org/ew/articles/2008/02/20/24florida_ep.h27.html

ninth through twelfth grade at 25.[30] Critics of the legislation argue that it is not the most cost-effective method for reform because it potentially comes at the expense of a stronger curriculum or higher-quality teachers.[31]

A study titled "The Impact of a Universal Class-Size Reduction Policy: Evidence from Florida's Statewide Mandate" examined Florida's statewide class-size reduction mandate in order to determine the impact on student achievement among students in grades 4 through 8. However, the introduction of CSR in Florida also coincided with several other statewide programs aimed at increasing student achievement, such as several new choice programs and "Just Read, Florida!," making it difficult to isolate the effects of CSR from other factors.[32]

The study compares two groups of students: "untreated" groups that were attending districts already within the designated class size mandate and "treated" groups that were in districts required to reduce class size once the legislation was in effect.[33] The district level and school level analysis concluded that **class size had statistically insignificant effects on students' cognitive and non-cognitive outcomes** (student absenteeism, suspensions, and incidents of crime and violence) in grades 4 through 8. However, the author concedes that, not having examined students in other grades, effects could be larger in earlier elementary grades or secondary grades.[34]

A review published by the Education and the Public Interest Center and Education Policy Research Unit at the University of Colorado would seem to discredit much of the research put forth by "The Impact of a Universal Class-Size Reduction Policy: Evidence from Florida's Statewide Mandate." Primarily, the author argues that the following four flaws with research methodology invalidate the findings:[35]

- The grades selected for analysis in this study (grades 4 through 8) have previously been shown to be among the least likely to benefit from CSR.
- The differences in class size between the treated and untreated comparison groups ranged from .5 to 3.0 students whereas research has shown that the threshold must be larger in order to see a difference in student achievement.
- The statistical modeling in the paper relies on district and school class size averages rather than actual class size of the enrolled students for the calculations.
- Because the comparison groups both had small class sizes, the difference between the groups was the way in which state funding was applied. The author concludes

[30] "Class Size Reduction Amendment." Florida Department of Education. http://www.fldoe.org/classsize/
[31] McNeil, M. "Leaner Class Sizes Add Fiscal Stress to Florida Districts." Op. cit.
[32] Chingos, M. August 2010. Op. cit.
[33] Ibid, p. 6.
[34] Ibid.
[35] Finn, J. 2010. Review of "The Impact of a Universal Class-Size Reduction Policy: Evidence from Florida's Statewide Mandate." Education and the Public Interest Center & Education Policy Research Unit, University of Colorado at Boulder. http://nepc.colorado.edu/files/TTR-FlaClassSize-Finn.pdf

that "this study actually found that administrative discretion in spending state class-size reduction funds did not affect students' academic performance."

As is evident from these large studies, the impact of class size on student achievement has yet to be adequately and reliably explored. Those studies which do take a sound methodological approach find little evidence of measurable benefits, while other studies routinely fall prey to poor analysis or insufficient data collection.

Although much of the research provides mixed results, certain common themes emerge. Based on an analysis of 19 high-quality studies identified by the Center for Public Education, the following general principles in class size reduction were identified:[36]

- Smaller classes in K-3 can increase student achievement.
- A class size threshold of 18 students has the best results on achievement.
- Smaller classes should last for the duration of K-3 for the greatest benefits.
- Minority and low-income students in elementary grades benefit the most from smaller classes.
- Teacher experience and preparation is an essential factor in the success of CSR programs.
- CSR requires adequate classroom space and qualified teachers to have positive effects.
- The effect of CSR on academic achievement can be supplemented with professional development for teachers and rigorous curriculum.

[36] "Class Size and Student Achievement" 2005. The Center for Public Education. http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Class-size-and-student-achievement-At-a-glance/Class-size-and-student-achievement-Research-review.html

Section Two: Class Size in Academic Intervention Programs

This section explores data on class size requirements for supplemental academic intervention programs, as mandated by state departments of education. Typically, these programs are operated through the Response to Intervention (RtI) framework. Our search for information did not uncover research that linked the effectiveness of individual programs to class size. Accordingly, this section compares programs on the basis of group size alone. Furthermore, our research did not uncover resources linked to accelerated instruction, specifically, and the following discussion encompasses all RtI interventions.

Overview of Response to Intervention Programs

Response to Intervention programs constitute a new organizational system for the identification of students in need of extra assistance and special education services across the grade span. RtI was developed in recognition of the limitations of "traditional psychometric methods" of identifying learning differences, which have been critiqued for their inability to effectively distinguish between learning disabilities and low achievement, as well as their tendency toward "overidentification" of students as learning disabled.[37] While RtI was first introduced as an alternative approach for identifying students with learning disabilities, it has since become recognized as applicable to a wide range of students of varying backgrounds and achievement levels.[38] Underscoring the applicability of RtI for *all* students, a 2009 article states, "RtI is not about special education, nor general education, nor talented and gifted, nor at-risk, nor migrant education… RtI is about Every Education."[39] RtI aims to provide a more nuanced, meaningful, and valid approach, shifting the "identification process away from diagnosing defects to examining student outcomes" in response to a contingent series of interventions.[40]

RtI features **a multilayered approach to preventing, monitoring, and resolving student learning differences.**[41] RtI programs are most often based on a three-level, multi-tiered intervention structure that establishes specific criteria for defining

[37] Kavale, K., et al. Spring 2006. "Responsiveness to Intervention and the Identification of Specific Learning Disability: A Critique and Alternative Proposal." *Learning Disability Quarterly*, 29:2, p. 114. http://www.eric.ed.gov/PDFS/EJ786201.pdf

[38] Coleman, M. and C. Hughes. 2009. "Meeting the Needs of Gifted Students within an RtI Framework." *Gifted Child Today*, 32:3, p. 15. http://www.maps.k12.wi.us/images/stories/files/OurPrograms/DELTA/GCT/GiftedChildTodayRtIandGT.pdf

[39] Tilly, D. 2009. "Questions and Answers on Response to Intervention." *Journal of Special Education Leadership*, 50:4, p. 12. From Coleman, M. and C. Hughes. 2009. Op. cit., p. 15.

[40] Ibid.

[41] "Essential Components of RTI – A Closer Look at Response to Intervention." April 2010. National Center on Response to Intervention, p. 2. http://www.rti4success.org/pdf/rtiessentialcomponents_042710.pdf

student success and identifying educational need.[42] While RtI is most frequently viewed as a three-tiered model, this is not always the case. For example, Georgia uses a four-tiered model, as identified in Figure 3.

Group Size in the RTI Framework

The following table (Figure 3) displays information on group size in academic intervention programs across all 50 states. All programs appear to be based on the RtI model, though there is variation in how states choose to implement the framework.

Figure 3: Group Size in Academic Intervention Programs in 50 States

State	Intervention Program Name	Tier II Group Size	Tier III Group Size	Notes
Alabama	Response to Instruction (RtI)[43]	Small groups	Three students or fewer	
Alaska	Response to Instruction/ Intervention (RTI)[44]	Three to Six	Three students or fewer	
Arizona	AZ Response to Intervention (RTI)[45]	Three to Seven	Three students or fewer	
Arkansas	Arkansas Literacy Intervention Matrix[46]	Not specified	Not specified	Currently developing a Math Intervention Matrix[47]
California	Response to Instruction & Intervention (RtI^2)[48]	Small groups	Small groups or individually	Group size is determined by school districts.
Colorado	Response to Intervention (RtI)[49]	Small groups	Generally groups of three to five, sometimes individual instruction	
Connecticut	Scientific Research-Based Interventions (SRBI) [50]	Four to six students or individual instruction	Three students or fewer	

[42] Wedl, Robert J. July 2005. "Response to Intervention: An Alternative to Traditional Eligibility Criteria for Students with Disabilities." Education Evolving, p. 3. http://www.educationevolving.org/pdf/Response_to_Intervention.pdf
[43] "Response to Instruction (RtI)." Alabama Department of Education. http://www.alsde.edu/general/RESPONSE_TO_INSTRUCTION.pdf
[44] "Using Response to Instruction/Intervention (RTI) for Alaska's Students." Alaska Department of Education & Early Development, July 2009. http://www.eed.state.ak.us/nclb/pdf/Alaska_RTI_Guidance.pdf
[45] "AZ Response to Intervention (RTI)." Arizona Department of Education. http://www.azed.gov/wp-content/uploads/PDF/AZ3TieredlevelsStudentSupport.pdf#triangle
[46] "The Arkansas Literacy Intervention Matrix." Arkansas Department of Education. http://www.arstudentsuccess.org/intervention-tools-and-resources/literacy/literacy-matrix/overview.html
[47] "The Math Intervention Matrix." Arkansas Department of Education. http://www.arstudentsuccess.org/intervention-tools-and-resources/math.html
[48] "Core Components-RtI^2." California Department of Education. http://www.cde.ca.gov/ci/cr/ri/rticorecomponents.asp
[49] "Response to Intervention (RtI): A Practitioner's Guide to Implementation." Colorado Department of Education, 2008. http://www.cde.state.co.us/rti/downloads/PDF/RtIGuide.pdf
[50] "Connecticut's Framework for RTI." Connecticut State Department of Education, August 2008. http://www.sde.ct.gov/sde/lib/sde/pdf/cali/srbi_full_document.pdf

State	Intervention Program Name	Tier II Group Size	Tier III Group Size	Notes
Delaware	Response to Intervention (RTI)[51]	Groups smaller than classroom	Groups smaller than classroom	
Florida	Multi-Tiered System of Supports[52]	Small groups	Very small groups or individual instruction	
Georgia	Response to Intervention (RTI)[53]	Small groups or individual instruction	Small groups	Tier 4 interventions for individual students
Hawaii	Comprehensive Student Support System (CCSSS) [54]	Small group setting	Small group setting	
Idaho	Response to Intervention (RTI)[55]	Group size is "dependent on the individual needs of students"	Group size is decreased from Tier 2.	
Illinois	Response to Intervention (RtI)[56]	Not specified	Not specified	
Indiana	Response To Intervention (RTI) [57]	Small group	More intensive, individualized instruction	
Iowa	Instructional Decision Making (IDM)[58]	Small groups	Small groups or individual instruction	
Kansas	Multi-Tiered System of Support (MTSS)[59]	No greater than five or six students per group	Three students or fewer	
Kentucky	Kentucky System of Interventions[60]	Small groups	More intensive, individualized instruction	
Louisiana	Response to Intervention (RTI)[61]	Not specified	Not specified	

[51] "Delaware Response to Intervention." Delaware Department of Education. http://www.doe.k12.de.us/infosuites/staff/profdev/rti_files/Desk%20Ref.pdf

[52] "Statewide Response to Instruction/Intervention (RtI) Implementation Plan." Florida Department of Education, 2008. http://www.florida-rti.org/_docs/RtI.pdf

[53] "Response to Intervention: Georgia's Student Achievement Pyramid of Interventions." Georgia Department of Education, 2011. http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Documents/RTI%20document%20Full%20Text.pdf

[54] "Comprehensive Student Support System Guide." Hawaii State Department of Education, 2009. http://doe.k12.hi.us/programs/csss/csss_guide.pdf

[55] "Response to Intervention-Idaho: Connecting the Pieces: Guidance for Idaho Schools and Districts." Idaho State Department of Education. June 2009. http://www.sde.idaho.gov/site/rti/docs/RTI%20Guidance%20Final.pdf

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State	Intervention Program Name	Tier II Group Size	Tier III Group Size	Notes
Maine	Response to Intervention (RTI)[62]	Small groups	Individual instruction	
Maryland	Response to Intervention (RtI)[63]	Groups of two to four or individual instruction	Small groups or individual instruction	
Massachusetts	Response to Intervention (RtI)[64]	Small group or individual instruction	Not specified	
Michigan	Michigan's Integrated Behavior and Learning Support Initiative (MiBLSi)[65]	Not specified	Not specified	
Minnesota	Response to Intervention (RtI)[66]	Not specified	Not specified	
Mississippi	Response to Intervention (RtI)[67]	Small groups or individual instruction	More intensive, individualized instruction.	
Missouri	Response to Intervention (RtI)[68]	Not specified	Not specified	
Montana	Response to Intervention (RtI)[69]	Three to five students per group	Two to five students per group	
Nebraska	Response to Intervention (RtI)[70]	Small groups	Small groups	
Nevada	Response to Intervention (RtI)[71]	Small groups or individual instruction	More intensive, individualized instruction.	

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[66] "Response to Intervention." Minnesota Department of Education. http://www.education.state.mn.us/MDE/EdExc/BestPrac/RespInterv/index.html

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[69] "Montana Response to Intervention: RTI Framework." The Office of Public Instruction, December 2008. http://www.opi.mt.gov/pub/RTI/Framework/RTIFrameworkGUIDE.pdf

[70] "RtI Framework in Nebraska." Nebraska Department of Education. http://www.education.ne.gov/RtI/rtiframework.html

State	Intervention Program Name	Tier II Group Size	Tier III Group Size	Notes
New Hampshire	Response to Intervention (RtI)[72]	Small groups	Very small groups	
New Jersey	Response to Intervention (RtI)[73]	Not specified	Not specified	
New Mexico	Response to Intervention (RtI)[74]	Groups of two to three students	Individual instruction, small groups, or whole groups	
New York	Response to Intervention[75]	Groups of three to five students	Groups of two students or fewer	
North Carolina	Responsiveness to Instruction (NCRtI)[76]	Not specified	Not specified	
North Dakota	Response to Intervention (RTI)[77]	Small groups	Very small groups or individual instruction	
Ohio	Response to Intervention (RTI)[78]	Small groups	More targeted, intensive, and individualized instruction	
Oklahoma	Oklahoma Tiered Intervention System of Support (OTISS)[79]	Not specified	Not specified	
Oregon	Oregon's Response to Intervention Initiative (OR-RTI)[80]	Not specified	Not specified	
Pennsylvania	Response to Instruction and Intervention (RtII)[81]	Small groups	Very small groups or individual instruction	

[71] "A Parent's Guide to Response to Intervention (RtI)." Nevada Department of Education. http://www.doe.nv.gov/SpecialEdResources/RtI_brochure_English-Web.pdf
[72] "An Interactive Guide to RtI in New Hampshire." New Hampshire Department of Education, June 2009. http://www.education.nh.gov/innovations/rti/documents/guide.pdf
[73] "A Family Guide to Response to Intervention (RtI)." Statewide Parent Advocacy Network. February 19, 2008. http://www.spannj.org/publications/RTI_PressQuality.pdf
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[76] "Responsiveness to Instruction." Public Schools of North Carolina. http://www.ncpublicschools.org/curriculum/responsiveness/
[77] "Response to Intervention in a Unified North Dakota Educational System." North Dakota Department of Public Instruction. http://www.dpi.state.nd.us/speced/personnel/RTI.pdf
[78] "Response to Intervention." Ohio Department of Education, September 25, 2008. https://docs.google.com/viewer?a=v&q=cache:pnFPsRhYC5IJ:education.ohio.gov/GD/DocumentManagement/DocumentDownload.aspx%3FDocumentID%3D56388+&hl=en&gl=us&pid=bl&srcid=ADGEESgiFeovTWNv1lQSJQSNHA4wN_94LheJMgw5RuylkzRfgA23yXiZ-9wl3s9h6wiZ8HA5gS9LYd8N6lRyE4RSdh1OzWqGVtU-3f0MCKnZsvjVQR7cVg3RbQ6pinOE-y0kjrnTZKhC&sig=AHIEtbQ2hqV8r513SAVXgJ_pdbvjLUFDgg
[79] "Oklahoma Tiered Intervention System of Support (OTISS)." Oklahoma State Department of Education. http://www.ok.gov/sde/oklahoma-tiered-intervention-system-support-otiss
[80] "Oregon's Response to Intervention Initiative (Or-RTI)." Oregon Department of Education. http://www.ode.state.or.us/search/page/?id=315

State	Intervention Program Name	Tier II Group Size	Tier III Group Size	Notes
Rhode Island	Response to Intervention (RtI)[82]	Small groups	Very small groups	
South Carolina	Response to Intervention (RTI)[83]	Small groups	More intensive, individualized instruction	
South Dakota	Response to Intervention (RtI)[84]	Groups of three to six students	Small groups or individual instruction	
Tennessee	Response to Intervention (RTI)[85]	Not specified	Not specified	
Texas	Response to Intervention (RtI)[86]	Groups of five to ten students	No more than three students	
Utah	3-Tier Model of Reading[87] and Mathematics[88] Instruction	In reading, groups of three to five students or individual instruction; in math, small groups	In reading, no more than three students in a group; in math, small groups or individual instruction	
Vermont	Responsiveness to Instruction (RTI)[89]	Not specified	Not specified	
Virginia	Response to Intervention (RTI)[90]	Groups of three to five	No more than three students	
Washington	Response to Intervention (RTI)[91]	Groups of three to six	No more than three students	
West Virginia	Response to Intervention (RTI)[92]	Groups of three to five	No more than three students	

[81] "Response to Instruction and Intervention (RTII) Framework: A Parent's Quick Reference Guide." Pennsylvania Department of Education. http://pattan.net-website.s3.amazonaws.com/files/materials/publications/docs/InstructFrmwk.pdf

[82] "Rhode Island Criteria and Guidance for the Identification of Specific Learning Disabilities." Rhode Island Department of Elementary and Secondary Education, January 2010. http://www.ride.ri.gov/OSCAS/Programs_Services/SLD%20Guidance%20-%20web.pdf

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[88] "Utah's 3-Tier Model of Mathematics Instruction." Utah State Office of Education, July 22, 2009. http://www.schools.utah.gov/sars/DOCS/resources/math.aspx

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State	Intervention Program Name	Tier II Group Size	Tier III Group Size	Notes
Wisconsin	Response to Intervention (RTI)[93]	Small groups or individual instruction	Small groups or individual instruction	
Wyoming	Response to Intervention (RtI)[94]	Small groups	No more than three students	

The collection of information on group size in Tier II and Tier III interventions reveals the following trends:

- Information is not available on group size for either Tier II or Tier III interventions in 12 states. All states which specify any information for group size state that students are instructed either in small groups or on an individual basis.

- For Tier II group size, only two states specify that more than six students may be served in a single group: Arizona, with a group size of three to seven students, and Texas, with a group size of five to ten students.

- For Tier III group size, the most popular configurations are three students or fewer or individual instruction. In Colorado and Montana, up to five students may be served in a Tier III group.

[92] "West Virginia Response to Intervention: An Implementation and Technical Assistance Guide for Districts and Schools." West Virginia Department of Education Office of Special Education Achievement, October 2006. http://wvde.state.wv.us/osp/RtiImpGuide91906.DOC

[93] "Wisconsin Response to Intervention: A Guiding Document." Wisconsin Department of Public Instruction, November, 2010. http://www.wisconsinrticenter.org/assets/files/rti-guiding-doc.pdf

[94] "A Model Response to Intervention (RtI) Framework to Identify Students with Specific Learning Disabilities." The Wyoming Department of Education, May 2011. http://edu.wyoming.gov/sf-docs/publications/WY_RtI_Framework_Doc_FINAL_July_27_2011

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