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BTC Brief

▶ NC BUDGET & TAX CENTER

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KINDERGARTEN THROUGH 3RD GRADE Class-Size Restoration Must Be a Budget Priority

*Timely,
accessible,
and credible
analysis of
state and local
budget and tax
issues*

KEY FINDINGS:

Both the NC House and Senate propose increasing class sizes in the public schools in order to cut the number of teachers and save money. However, an examination of the literature on the impact of class size on students' education shows that increasing class sizes – especially in kindergarten through third grade – will result in a decrease in education quality and lead to a loss of student achievement that will never be recovered. In particular, students from low-income households will be denied an opportunity to catch up to their peers if class sizes are increased in the early grades.

The Senate Budget and the Proposed House Budget

The House proposes increasing class sizes by two in 2009-2010 and three in 2010-2011; the Senate by two in both years. For 2009-2010, increasing average class by two will bring the average normal class size in kindergarten through third grade (K-3) up to 20, to 24 in fourth through sixth grades, and to 23 in seventh and eighth grades. In high schools, class sizes will increase to 26.5 in ninth grade and 28.6 in sophomore, junior and senior classes. Under the House's plan, these numbers will all increase by one in 2010-11.

Of course, many classes will be much larger as enrollment in some courses in some grades will not reach the average size.

Class-Size Increases Compromise Education Quality

A mass of empirical literature on the reduction of class sizes has concluded that smaller class sizes improve classroom atmosphere by reducing noise, interruption and disruption and improve the quantity and quality of teacher interactions with individual students. Effects appear to accelerate when class size goes below 18 to 20 students.¹

The Effect on Children in Early Grades is Significant

The literature on the link between higher student achievement and smaller class sizes in the early grades is especially compelling.²

The best available study, that of the STAR project in Tennessee, used a quasi-experimental research

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design that allowed researchers to scientifically conclude that students in K-3 who were taught in classes of 13 to 17 students did significantly better on standardized tests than students in classes numbering 22 to 26 students.³

This held for all students, be they white, minority, rural or urban, although the effect was doubly quick for minority students. Students in smaller class were also less likely to be held back a grade.

These effects lasted through to at least eighth grade, even when students were placed in similar-sized classes for grades four through eight.⁴ Recent analysis of the STAR data has shown that students who were in smaller K-3 classes were more likely, all else equal, to graduate high school. The effect was greater for students receiving free lunches during the K-3 years.⁵

Smaller class sizes in the early grades have the capacity to lift the achievement of all students, but especially that of students from low-income households, by enabling better learning environments for the teaching of critical learning skills early in a student's school career.⁶ Studies show that students from low-income households start kindergarten already well behind in literacy and numeracy skills compared to their wealthier-household peers.⁷ Enabling smaller class sizes in the early grades is a vitally important policy intervention to help these students catch up⁸ and to give them literacy skills essential to later learning.⁹

A Critical Budget Priority

It is therefore critical that 2008-2009 class sizes be restored in the 2009-2011 budget, at least for K-3.

Based on numbers from the NC Department of Public Instruction (DPI) released late last week, this means restoring 2500 K-3 teaching positions for 2009-2010 – about 37% of the projected 6725 teaching positions to be cut for that school year. DPI estimates that increasing K-12 class size by two will cut district allotments by \$397 million.¹⁰

Based on DPI numbers, the cost to restore one fewer student per class for K-12 is around \$199 million, and the cost to restore one fewer student per class for K-3 is \$69 million.

Not restoring K-3 class sizes will have a lasting effect on North Carolina's children. This is not a cut that can be restored later for children who will be in K-3 over the next two years.

1 See the summaries and analyses of the hundreds of studies in Slavin, R., (1989) "Class Size and Student Achievement: Small Effects of Small Classes," *Educational Psychologist* 24; Robinson, Glen and J. H. Wittebols, (1986) *Class Size Research: A Related Cluster Analysis for Decision Making*, Educational Research Service; Glass, Gene and Mary Lee Smith (1978) *Meta-Analysis of the Relationship of Class Size and Student Achievement* Far West Laboratory for Educational Research.

2 For instance, see Word, E et al, (1990) "Project STAR Final Report, 1985-1990," Tennessee State Department of Education; Tillitski, C., (1990) "The Longitudinal Effect Size of PRIME TIME: Indiana's State Sponsored Reduced Class Size Program," 62 *Contemporary Education* (Fall); Mueller, D., Clinton, I., & Walden, J. (1988) "Effects of Reduced Class Size in Primary Classes," *Educational Leadership* 45 (7): 48-50.

3 Achilles, C., Nye, B., Zaharias, J., Fulton, D., & Cain, C., (1996) "Education Equivalent of Medicine's Framingham Heart Study," ERIC Clearinghouse ED 402677; Also see Krueger (1998) *Experimental Estimates of Production Functions* (Princeton U; NBER).

4 Nye, B., Fulton, D., Zaharias, J., & Cain, C., (1995) *The Lasting Benefits Study, Eighth Grade Technical Report*, Center of Excellence for Research in Basic Skills, Tennessee State University.

5 Finn, J., Gerber, S., Boyd-Zaharias, J., (2005) "Small Classes in the Early Grades, Academic Achievement, and Graduating From High School," *Journal of Educational Psychology* 97 (2) (May) pp 214-223.

6 For some rich anecdotal evidence on the importance of smaller class sizes for teachers in high-needs schools, see Berry, B., (2008) "Staffing High Needs Schools: Insights from the Nation's Best Teachers," *Phi Delta Kappan* 89 (10) (June).

7 See the summary of the literature in Reynolds, A., & Temple, J., "Cost-Effective Early Childhood Development Programs from Pre-School to Third Grade," *Annual Review of Clinical Psychology* 2008, 4: 109-139; Also see Hart, B., & Risley, T., (1995). *Meaningful Differences in the Everyday Experience of Young American Children*. (Paul H Brookes) and Coley, RJ (2002) *An Uneven Start: Indicators of Inequality in School Readiness*, Policy Information Report, Policy Information Center, ETS.

8 On the closing of the reading achievement gap between white and minority children, see Chatterji, M., (2006) "Reading Achievement Gaps, Correlates, and Moderators of Early Reading Achievement: Evidence from the Early Childhood Longitudinal Study (ECLS) Kindergarten to First Grade Sample," *Journal of Educational Psychology* 98 (3) (August), pp 489-507.

9 On the importance of early literacy instruction and reading to later achievement, see the lessons learnt from New Jersey's efforts at school reform summarized in MacInnes, G (2009) *In Plain Sight: Simple Difficult lessons from New Jersey's expensive Effort to Close the Achievement* (Century Foundation)

10 See <http://www.dpi.state.nc.us/docs/fbs/allotments/planning/state/houseproposal.xls>