

CLASS SIZE REDUCTION: NO SILVER BULLET FOR SPECIAL EDUCATION STUDENTS' ACHIEVEMENT

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While there are hundreds of studies reported for general education, few researchers have focused on the impact of class size on the academic achievement of students with special needs. Despite escalating special education costs and increasing student needs, policies governing special education remain inconsistent. We examine the effect of class size reduction on special education students. Two issues were explored: (a) appropriate class size and caseload as they influence special education student academic achievement and (b) the effect of class size on special education teacher attrition rate and teaching methods. The implications of these issues for policy makers are also discussed. Findings indicate 1) each state has different rules on class size and caseload for special education, 2) the students demonstrating the most profound needs remain largely unaffected by class size reduction, and 3) that attrition rate is affected more by quality of teacher preparation than it is by class size. Teachers felt inadequately prepared for inclusion and indicated that their primary need was for more specific inclusion training. We identified no single best way to determine appropriate class and group size for special instructional programs and services; however, the existence of well-qualified teachers proved an important factor in increasing student achievement.

For decades smaller class size for special education classes and individualized instruction had been identified as an important factor for meeting the needs of students with special needs (Klonsky, 2002, 1996; National Association of State Directors of Special Education, 2000; Robinson, 1990). Policy makers frequently express an interest in whether class size significantly predicts student achievement in both general and special education (e.g., Mitchell & Beach, 1990). Though researchers have completed many

studies on class size reduction in general education (Acilles, Finn & Bain, 1997; Agron, 1998; Casey & Latigue, 1999; Finn, 2002), few investigators have focused on the effects of class size on special education students' academic achievement and on student engagement time for students with different cognitive ability levels (Logan & Keefe, 1997; McCabe, Jenkins, Mills, Dale, Cole, & Pepler 1996). Investigators found that reducing the class size, particularly in the early years, significantly increases academic achievement (Finn, 2002; Klonsky, 2002; Stasz & Stecher, 2000; Zarghami & Schnellert, 2003).

In this paper we explore the effects of class and caseload on student academic achievement, teaching methods and special education teacher attrition rates. Class size reductions are not often applied in districts with the highest proportions of at-risk students (Bracey, 1999; Finn & Achilles, 1999; Pritchard, 1999). Administrators in reducing class sizes, unfortunately, hired fewer well-qualified educators and many time class size reductions were accomplished by transferring special educators into general education rooms (Bohrnstedt & Stecher, 1999).

What Research Says about Class Reduction for Special Education Students

Simply put, the results of research on the effects of class size on student academic performance were inconclusive. Mixed results accorded with such indicator variables as achievement, discipline, grade retention, and attendance (Finn, 2002; Harris & Plank, 2000; Ponders, 2001; Sutton, 2000). However, economically disadvantages students and those representing ethnic minorities tend to perform better academically in smaller classes and demonstrated increased aspiration to attend college (especially African-American youngsters) (Krueger & Whitmore, 2001; Robinson, 1990).

Teacher qualifications and systematic professional development for teachers of special needs children proved especially predictive on achievement related variables. Class size reduction in California, in fact produced unintended negative side effects, probably because unqualified teachers were hired. Investigators (Stecher &Bohrnstedt, 2000) noted that the average qualifications (education and credentials) of teachers in California decreased during the past few years for all grade levels, but the declines were worst in elementary schools and schools serving low-income, minority, or EL students by having fewer well-qualified teachers.

Class size reduction in the absence of systematic teacher training and professional development did not produce effective results, and more importantly, unqualified teachers were differentially assigned in schools with the greatest proportion of at-risk students (Anderson, 2000; Blatchford, et al, 2002; Finn, 2002). U.S. Department of Education officials (2000) argued that the Class Size Reduction program enabled schools to hire 29,000 new teachers about only one percent of whom held special education licensure.

The Influence of Caseload and Class Size on special Need Student Achievement

Policymakers emphasized reduced class size, qualified teachers, and specialized

instruction to meet the needs of students with special needs. The National Association of State Directors of Special Education (NASDSE, 2000) defined caseload and class size as the total number of students for whom a teacher held some degree of responsibility. NASDE defined class size as the number of students for whom a teacher structures activities at a given time.

Although the number of students with special needs is growing, no statewide consistency exists in setting student-teacher ratios (Rylance, Ching, Russ, & Dobbe-Whitcom, 1999). Researchers and policy experts indicate that there is significant variance in caseload/class size provisions among the states. Some reasons for this are that caseload and class size are used in negotiations by teachers' unions or other professional bargaining units, and there is an absence of research linking caseload/class size and improved student outcomes (Hannaway, 1999; Jackson, 2003; NASDE, 2000; McCrea, 1996).

McCrea (1996) noted that the maximum student-teacher ratio recommended for special education was 15:1, and that students were generally grouped by academic performance. The lower the teacher-student ratio for students with special needs, the more time teachers spend covering material. In addition, smaller case loads produced noticeable declines in the number of disciplinary referrals and improvements in teacher moral and attitude toward teaching (Finn, 2002; U.S. Department of Education, 2000). Although small class size positively affects the learning environment, as measured via non-learning variables (time on task, attendance), data did not indicate that special education students show higher academic achievement in smaller classes (Patriacra & Stewart, 1995).

Slavin (1990) noted that the teacher-student ratios needed to reach nearly 1:1 before teachers employed individualized methods. He also noted that dependence on the teacher is a unintended negative outcome of one-on-one instruction. Another is that the model is expensive (Blatchford, et, al. 2002, Kamps & Walker, 1990).

No identifiable caseload size or administrative arrangement has consistently produced positive outcomes for students with disabilities (Russ, Chiang, Rylance & Bongers, 2001). The caseload for teachers of students with special need ranged from 3 to 35 students per teacher; a significant decrease in student achievement was observed when special education caseloads were increased (Algozzine, Hendrickson, Gable & White, 1993). Though academic achievement did not show gains, Wheeler (1993) noted that smaller classes produced fewer behavioral problems.

Class size might exert a positive impact on special education students' engagement in their learning activities and in reducing discipline problems, but there is not enough evidence to prove that class size reduction produces significant increments in special need students' academic achievement. It appears that class size effects are mediated by other factors including appropriate student placement, a smaller range of assigned academic activities, effective use of paraprofessionals, and other team members (MAGI, 1995).

Clearly, smaller class size demonstrates the potential for improving learning. This however, has not yet been clearly and unequivocally demonstrated. One might pose the following question: If class size is not the magic bullet what is? The answer may well be educators' level of training and effectiveness.

Teacher Qualification and Teaching Practice

The quality of instruction is probably more important than class size in predicting student achievement (Rivkin, Hanushek, & Kain, 2000). Policy makers, teachers, and parents have come to realize that schools cannot improve until they attract and retain the most qualified teachers. Growing demand for class size reductions and the careless hiring of more teachers may negatively affect student learning. In providing students (with or without special needs) with high quality of teaching, hiring the most qualified teachers and providing systematic professional development are the most important steps. Fernandez and Mateo (1998) studied the relationship between class size and quality of teaching. No correlation has been observed between class size and teaching quality and it is obvious that unqualified teachers cannot teach and pass along skills and knowledge that they do not possess. A quality education depends on the skill level of teachers more than class size. While research indicates that disadvantaged and at-risk students are most likely to benefit from small classes, poor urban and rural school districts also face the most severe challenges in recruiting and retaining qualified teachers (Sutton, 2000).

In special education classrooms few differences in teaching practices were observed as a function of class size (O'Connell & Smith, 2000). Class size failed to influence the variety of teaching methods used by special education teachers (McCrea, 1996; Moody, Vaughn, & Fischer, 2000). Finn (2002) indicated that other important factors such as methods of teaching and teacher's qualifications, and one-to-one tutoring should be identified as alternatives to merely reducing class size. Considering the fact class size reduction does not guarantee students' achievement, policymakers should reconsider other alternatives to increase students' academic performance.

Special Education Teacher Attrition Rate

Another factor that may be as or more important than class size in predicting student achievement is retraining the best most experienced practitioners. U.S. Department of Education officials noted that the greatest attrition rate of special education teachers is in cross-categorical special education classrooms. Louise Harris and Associates (1988) found the 60% to 80% of general educators had considered turning from teaching to other professions. The attrition rate among special educators is probably even higher than that of their general education counterparts (Billingsley, 1993; Lauritzen, 1997). In one study it was revealed that the average special educator leaves this job within 6 years (Singer, 1993).

According to the Wisconsin Department of Public Instruction (WDPI, 1999), a higher attrition rate was reported for fully licensed special education teachers than for general education teachers. Emergency licensed special education teachers lacking appropriate training also demonstrated a higher attrition rate. The high rate of transfer of special

education teachers to general education fields also contributes to special educators' higher attrition rate. Many special education teachers transfer into general education positions as soon as these become available. The continued large number of emergency licenses in special education is, in part, related to the large number of special education teachers seeking transfers (WDPI, 1999).

A variety of factors have been evaluated as reasons for the high attrition rate among special education teachers. Some investigators suspect that large caseloads exert a strong influence on decisions to leave the field (WDPI, 1999; Wisniewski & Gargiulo, 1997). The majority (61%) of special education teachers cited large caseloads and class size as a major problem (Russ, et al, 2000; Sack, 1998).

Conclusions and Implication for Policy Makers

Overall, investigations indicate that class size reduction will be a controversial issue for policymakers, special educators, and general educators. No single best class size, class load or teacher-student ratio could be identified via a review of extent research. Smaller class sizes generally appear to promote higher level of engagement and instructional individualization. Smaller case load may be associated with higher teacher retention rates. Qualified teachers rather than just class size, is an important factor in predicting student achievement. Each educational institution should combine class size reduction policies with hiring fully qualified teachers with the goal of improving educational achievement for special needs children.

Teachers hired to reduce class size must be certified and must demonstrate content-area competence before they are brought on board merely to reduce class size. Particular consideration to reducing class size should be given at the early elementary grades (kindergarten through third grade) for which some investigations have shown a positive effect (Klonsky, 2000; Sutton, 2000; Zarghami & Schnellert, 2003).

Policy makers should consider options other than reducing class size (or merely reducing size) such as recruiting (including the use of signing bonuses and other financial incentives), hiring, and training fully qualified general and special education teachers. Another option would be hiring special education teachers in general education classrooms where special need students receive services. Providing systematic professional development will also enhance special-need teachers' practice of effective teaching strategies. Substantially more research is needed to identify other factors enhancing the social, emotional and academic achievement of students with special needs.

Class size is one environmental contextual factor that affects both teacher's moral and student academic achievement. Educators and policy makers should look at other alternatives for increasing student achievement. As our understanding of academic performance exists now, the following conclusions are warranted:

- Shortage of resources increased the pressure to show evidence that costly small class size is increasing student achievement.

- Investigations didn't show that smaller classes boosted the special education student achievement.
- Only limited evidence linking student higher gain to class size reduction.
- Teaching in smaller class helps teacher to know the individual need of students, spends more time with them, and reports less discipline problems.
- Advocates of smaller classes focus especially on primary grades.
- Class size reduction to be successful should target the schools which are serving those with disadvantage population.
- Policy makers should pursue more cost-effective ways of improving student achievement such as hiring qualified teachers, providing systematic training for teachers, using technology to meet the individual need of each student, using teacher aides, peer tutoring, use of cooperative learning group, and team teaching.

References

- Achilles, M., Finn, D., & Bain, P. (1997). Using class size to reduce the equity gap. *Educational Leadership*, 40(4),4.
- Algozzine, B., Hendrickson, J., Gable, A. & White, R. (1993). Caseloads of teachers of students with behavioral disorders. *Behavioral Disorders*, 18, 103-109.
- Agron, Joe. (1998, April). Thinking small. Advantages and disadvantages of smaller class sizes. *American School and University*, 8(1),70.
- Anderson, L. (2000). Why should reduced class size lead to increased student achievement? In M.C. Wang and J. D. Finn (Eds.),. *How small classes help teachers do their best*. (pp.3-24). Philadelphia, PA: Temple University Center for Research in Human Development and Education, and the U.S. Department of Education.
- Billingsley B. S. (1993). Teacher retention and attrition in special and general education: A critical review of the literature. *The Journal of Special Education*, 27, 137-174.
- Bohrnstedt, W., & Stecher, B. (1999) Eds. *Class Size Reduction in California: Early Evaluation Findings*. Palo Alto, California: CSR Research Consortium, 1999. P157.
- Bracey, G. W. (1999, November). Reducing class size: The findings, the controversy. *Phi Delta Kappan*, 81(3), 246-247.
- Blatchford, P., Moriarty, A., Edmonds, S., & Martin, C. (2002). Relationship between class size and teaching: A multimethod analysis of English Infant School. *American Educational Research Journal*, 89 (1), 101-132.
- Casey, J., & Lartigue, JR. (1999). Politicizing class size. *Spectrum: the Journal of State Government*, 72, 22.
- Fernandez, J., & Mateo, M. (1998). Is there a relationship between class size and student ratings of teacher quality?. *Educational & Psychological Measurement*, 58(4).
- Finn, J. (2002). Small classes in American school: Research, practice, and politics. *Mid-Western Educational Research*, 15(1), 19-25.
- Finn, D., & Achilles, M. (1999). Tennessee's Class Size Study: Findings, implications, misconceptions. *Educational Evaluation and Policy Analysis*, 21(2), 97-110.
- Hannaway, J. (Ed.). (1999). *Class size: Issues and new findings*. *Educational Evaluation and Policy Analysis*, 21(2).

- Harris, D., & Plank, D. (2000). *Making policy choices: Is class size reduction the best alternative?* Michigan State University and Michigan Department of Education.
[On-Line] Available: <http://www.epc.msu.edu/>
- Jackson, T. (September, 2003). [Caseload/Class Size in Special Education](#). *Quick TurnAround*, National Association of State Directors of Special Education
- Kamps, D., & Walker, D. (1990). A comparison of instructional arrangement for children with autism served in a public school sitting. *Educational and Treatment of Children, 13*, 197-216.
- Krueger, A., & Whitmore, D. (2001). *Would smaller class help close the black-white achievement gap?* Princeton University Relations Section Working Paper No. 451. Available [On-Line] http://www.ir.princeton.edu/pubs/working_papers.html
- Klonsky, M. (2002). How smaller schools prevent school violence. *Educational Leadership, 59*(5), 60-65.
- Logan, K. R., & Keefe, E. B. (1997). A comparison of instructional context, teacher behavior and engaged behavior for students with severe disabilities in general education and self-contained elementary classrooms. *The Journal of the Association for Persons with Severe Disabilities, 22*, 16-27.
- Louis Harris & Associates (1988). *The metropolitan life survey of American teachers: Strengthening the relationships between teachers and students*. New York: Metropolitan Life.
- McCabe, J. R., Jenkins, J. R., Mills, P. E., Dale, P. S., Cole, K. N., & Pepler, L. (1996). Effects of play group variables on language use by preschool children with disabilities. *Journal of Early Intervention, 20*, 329-340.
- Moody, S. W., Vaughn, S., Hughes, M. T., & Fischer, M. (2000). Reading instruction in the resource room: Set up for failure. *Exceptional Children, 66*, 305-316.
- McCrea, L. (1996). A review of literature: Special education and class size. (ERIC Document Reproduction Services No. ED 407 387).
- Mitchell, D. Beach, S. (1990). *How changing class size affects classrooms and students*. (ERIC Document Reproduction Service No. ED 449 576).
- MAGI Educational Services. (1995). *The New York state special education class size research study*. Rye, NY: MAGI Educational Services. Inc. (ERIC Document Reproduction Services No. ED 407 387).
- National Association of State Directors of Special Education. (2000). *Special education issues in caseload/class size*. (ERIC Document Reproduction Services No. ED 439-574).
- O'Connell, J., & Smith, C. (2000). *Capitalizing on small class size*. (ERIC Document Reproduction Service No. ED 440 430).
- Patriarca, L.; & Stewart, D. (1995). *What we know about the effect of class size in special education*. Paper presented to the Michigan Department of Education. Office of Special Education Services. Lansing, MI.
- Ponders, E. (2001). *The influence of teacher characteristics and preparation on student achievement in publicly funded Detroit schools (Michigan)*. University of Michigan. (UMI No. AA13001031).
- Pritchard, I. (1999). Reducing class size: What do we know? [Online]. Available: http://www.ed.gov/pubs/ReducingClass/Class_size.html Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education.

- Rivkin, S., Hanushke, E., & Kin, J. (2000). *Teacher, school, and achievement*. Paper presented at Amherst College, University of Rochester.
- Robinson, G.E. (1990). Synthesis of research on effects of class size. *Educational Leadership*, 47(7), 80-90.
- Russ, S., Chaing, B., Rylance, B., Bongers, J. (2001). Caseload in special education: An integration of research findings. *Exceptional Children* 67, 2, 161.
- Rylance, B. J., Chiang, B., Russ, S., & Dobbe-Whitcomb, S. (1999, May). *Special education caseload and class size policies in the fifty states*. Madison: Wisconsin State Department of Public Instruction.
- Stasz, C., & Stecher, M. (2000). Reduced Size and Non-Reduced Size Classrooms. *Educational Evaluation and Policy Analysis*, 22 (4), 313-329.
- Stecher, B., & Bohrnsted, G. (Eds.). (2000). *Class size reduction in California: The 1998-99 evaluation findings*. Sacramento: California Department of Education.
- Sutton, L. (2000). *A study of behaviors of at-risk students in small classes, grades K-3*. Doctoral Dissertation. Eastern Michigan University. (UMI No. AA199604444).
- Singer, J. (1993). Are special educators' career paths special? Results from a 13-year longitudinal study. *Exceptional Children*, 59, 262-279.
- U.S. Department of Education. (2000). *The class size reduction program*. Boosting student achievement in schools across the nation. [Online]. Available: <http://www.ed.gov/offices/OESE/ClassSize/class.pdf>
- Wheeler, J. (1993). Kansas class size/caseload study [On-line]. KS: Northeast Kansas Education Service Center. [Online]. Available: <http://nekesc.org/kids/CSCL/summary.html>
- Wisniewski, L., & Gargiulo, R. (1997). Occupational stress and burnout among special educators. A review of literature. *The Journal of Special Education*, 31(3), 325-346.
- WDPI (1999). Quality staff. Wisconsin Department of Public Instruction. Available: [On-Line] <http://www.dpi.state.wi.us/dpi/een/sip3d.html#table9>
- Zarghami, F., & Schnellert, G. (2003). Insight on class-size reduction as an educational reform. *Policy Perspective*, v3, 6, pp. 1-3.