

Elementary School Grade Span Configuration: New Evidence on Student Achievement, Achievement Equity, and Cost Efficiency

by: Kathy Gregg

A feasibility study is underway in Prospect Heights Public School District 23. It will examine a change to the current configuration of the district's three elementary schools. The change would set aside the district's current neighborhood schools in which students attend a school from kindergarten through fifth grade according to geographic boundaries within the district. This configuration would give way to a "grade level center" configuration, which would include fewer grades per school and more students per grade. The conversion would require the consolidation of student populations and the elimination of district boundaries. Specifically, all children in the district would attend all three elementary schools, Eisenhower, Ross, and Sullivan, for two years before going to MacArthur Middle School for three years. (Warren, School Board Meeting, October 1, 2002). The district has opaquely advised the community that this initiative will be used in "further developing its format in long-range planning" (Bearwald, 2002).

The term "grade span" refers to the number of grade levels in a school building. "Grade configuration" identifies which grades are taught in a school building. Currently the district's four schools have four different grade spans with four different grade configurations. Eisenhower School has the broadest grade span; students span grade levels kindergarten through fifth grade. Ross School spans grade levels pre-kindergarten through second grade. Sullivan School spans grade levels three through five. MacArthur Middle School spans grade levels six through eight (I.S.B.E., 2001). The ongoing feasibility study will not propose specific grade combinations for the elementary schools, and the district has determined it will not adjust the middle school grade span (Warren, School Board Meeting, October 1, 2002).

The belief of many policymakers and educators that grade configuration simply didn't matter educationally was unchallenged until recent research. Support or criticism of a particular school configuration or size was based on purely anecdotal experiences. Today, however, a substantial body of new research demonstrates that decreasing grade spans, thereby increasing the number of students per grade, and multiplying students' transitions from school to school negatively impacts student achievement.

This new research suggests that the most equitable and cost efficient means of delivering high student achievement is through smaller schools with broader grade spans. District policymakers should analyze and consider the findings of this new body of research before moving in an opposite direction. The decision the district makes will not only impact student achievement in this district, it will also effect the students' success as they transition into large public high schools that are part of the extremely large District 214. Although all residents of this district have a stake in the efficient use of tax revenues, those revenues should, first and foremost, be used to deliver education in the best and most equitable manner.

Transitioning Negatively Effects Student Outcomes

Transitioning refers to the movement of students from school building to school building. Schools with narrow grade spans and fewer grade levels per building experience frequent student turnover. For example, if District 23 implements a configuration requiring students to attend each of its four schools, students will experience four transitions by the time they reach high school. John W. Alspaugh (1998), Professor of the University of Missouri's School of Education and Counseling Psychology, conducted research that correlated poor educational outcomes with students' learning instability resulting from school transitions:

There is a consistent student achievement loss associated with the transition from self-contained elementary schools to intermediate-level schools. The achievement loss in reading, mathematics, science, and social studies occurred when the transition was at grade 5, 6, 7, or 8. Student achievement scores tended

to recover to their pre-transition levels in the year following the transition. In Alspaugh and Harting, it appeared that the size and organization of the school districts might be related to the transition loss. (p.20)

The publication to which Alspaugh refers in the preceding quotation reported the findings from a study that compared K-4 schools with K-8 schools. (Alspaugh and Harting, 1995, Abstract). We can expect reconfiguring District 23 would cause transitional achievement loss not only as students move from fifth grade to middle school, but for each of the four transitions students would suffer by the time they enter high school. In fact, a plan requiring students to attend every school in District 23 would require that every year the students would either be suffering transitional achievement loss or be making up for it. Will District 23 students be able to keep up with the increasing educational demands of our state and society given that disadvantage?

Additionally, students do not appear to “get used to” transitioning over time. Previous experience with making transitions does not moderate the achievement loss of the new transition. (Alspaugh, 1998 p. 21-3). This achievement loss is not ameliorated by practices intended to help students make transitions. Alspaugh restates the 1997 Pamperien research that “found that the implementation of middle school practices had little influence on the student achievement scores” (Alspaugh, 1998 p. 25).

Students that attended middle schools experienced greater achievement loss in the transition to high school than students that attended schools configured as kindergarten through eighth grade (Alspaugh, 2000, p. 3). Researchers Seidman and Alspaugh determined:

As the number of school-to-school transitions increased, there was an associated increase in the high school dropout rates (. . .) The increased high school dropout rates for the students attending middle schools may have been associated with the achievement losses and the double transitions at Grades 6 and 9 (. . .) The students attending larger schools tended to experience more transitions than the students in smaller schools. The schools with two transitions had higher dropout rates than the schools with only one transition.(Alspaugh, 1998, p. 23-25)

Given these findings, it would appear obvious that a district requiring four transitions from kindergarten to high school would cause a higher dropout rate than a district requiring only one or two transitions. Alspaugh’s (1998) study demonstrates that students placed in relatively small groups for long spans of time tend to experience better educational outcomes, these better outcomes overlap into the students’ high school education (p. 25).

Multiple transitions cause other negative outcomes. Ron Renchler (2000), a research analyst and writer for the ERIC clearinghouse on Educational Management at the University of Oregon, stated that school transitions impose stress on students and negatively influence schools’ identity and sense of community (p. 6). Thomas Moffitt’s 1996 dissertation presented to Miami University at Ohio studied the impact of a district’s elementary grade span structure on family-school partnerships. He stressed the importance of family-school relationships on educational outcomes: The studies added tremendously to our knowledge about the contributions families made to their children’s success, and the support families need from educators to guide their children successfully through their schooling. When parents are involved, children do better in school and go to better schools. (p. 24-25)

However, Moffit's research concluded that schools with narrow grade configurations have a negative impact on family-school partnerships (p. 195).

Finally, the challenges for families with children in narrowly spanned "grade level centers" involve more than matters of convenience and preference. Dr. Craig Howley (2002), former Director of ERIC Clearinghouse on Rural Education and Small Schools and Adjunct Professor of Ohio University, suggests that each transition from one narrowly configured school to another seems to disrupt the social structure in which learning takes place (p.27).

That disruption includes the decrease in time families have to contribute to the education of their children when their children attend multiple schools within a district.

Narrow grade span configurations not only cause the negative impacts of multiple transitions discussed above, they also cause a host of problems associated with larger school size.

Narrower Grade Spans Result in Larger Schools

The majority of today's research scholars apply the common metric of the number of students per grade to define a school's size. Measuring student populations using total enrollment gives only half the picture when describing school size (Howley, 2001, p. 4). In fact, when a school contains fewer grades per building, more children per grade attend that school and the dynamic of a larger school setting is created (Howley, 2000, p. 2). Thus, two schools with exactly the same total enrollment can actually have a completely different size dynamic depending on their grade spans. Howley (2000) believes enrollment per grade is a more useful and improved measure of a school's size (p.2).

Consider District 23's current configuration using Howley's metric. Sullivan, which has the same number of students as Eisenhower (335), would be considered to have the dynamic of a school twice the size of Eisenhower. Bear in mind, Sullivan, a 3-5 school, has a grade span half the size of Eisenhower's, a K-5 school. The same size metric would be true of a comparison of Eisenhower to Ross, which enrolls 300 students in three grade levels. MacArthur would be considered to have the dynamic of a school about four times the size of Eisenhower, as MacArthur's almost 600 students span only three grade levels.

Narrowing District 23's grade span would therefore increase the size of each of its three elementary schools. So what, you might wonder?

Smalls Schools Increase Achievement Level

In prior years, only a few studies had been conducted on school size and grade spans, and the findings had been intriguing, but inconclusive. Today's research and initiatives are more numerous, and researchers are more comfortable with making strong claims and assertions, such as Howley's (2000) response to the Walberg and Fowler studies, "[t]hese and other findings suggest that small schools are universally better" (p.5). Alspaugh (1998), asserts similar findings, "[l]ow SES [socio-economic status] tends to have limited influence on students achievement in small schools" (p. 21). William Duncombe (2002), Professor of Public Administration and Senior Research Associate of the Center for Policy Research at the Maxwell School of Syracuse University, recently published an economic update of the most cost effective size of school. He shared Howley's 1996 contention that, "(. . .) more recent research on student performance in schools indicates that small schools may be beautiful. 'All else equal, small schools have evident advantages for achievement" (p. 246). Duncombe's (2002) study also cited evidence that small to moderately size elementary schools may optimally balance economies of size with the potential negative effects of large schools (p. 245). Economy of size refers to the most efficient

use of capital. Howley (2000) and Duncombe (2002) agree a small school size would be found between 200 and 500 students depending on grade span configuration (p. 3, p. 245).

Renewed interest in small school size is growing nationwide. Patricia Wasley (2002), Dean and Professor of Educational Leadership, College of Education, University of Washington, applauds small school initiatives in New York, Boston and Chicago that are receiving funding from the U.S. Department of Education, and private foundations like the Bill & Melinda Gates Foundations, the Pew Charitable Trust, and the Joyce Foundation (p. 7). In fact, two Chicago high schools involved in the new small school initiative, Northside College Preparatory High School and Young Magnet High School, unseated the long standing New Trier Township High School last year as the number one high school in the state (I.S.B.E.). Tellingly, several years ago the Wilmette school districts that feed into New Trier reconfigured, adding one elementary school transition before high school (I.S.B.E.).

Of the many things that effect student achievement level, socio-economic status (SES) has a major influence. Common SES factors include race and ethnicity, income or poverty, adult education, special needs, limited English proficiency, and the percentage of secondary students in the district

(Duncombe, 2002, p. 250). In support of the argument that small schools reduce the negative effects of some SES factors, Howley (2000) included Walberg's and Fowler's 1987-94 research, which imposed controls for SES, thereby removing the influence of SES. The studies showed that smaller schools outperformed larger schools on a level playing field, and they were more cost-effective than larger schools and districts in producing achievement (p. 5).

Additionally, Howley's (2000) research asserts that at smaller schools, regardless of economic affluence, achievement is more equitable than in larger schools. The strongest influence of school size on achievement equity was realized in the small size category of 300 or fewer students (p. 3-4). "This effect was so strong that Montana's smaller schools, with higher levels of poverty, actually outperformed its larger schools." (p. 5) Two studies (Fetler 1989; Pittman and Haughwout 1987) suggest that smaller size may improve odds for collaboration, communication, and common purpose (Howley, 2000 6). Wasley (2002) makes similar claims based on personal experience and professional research:

Over the years, I have taught students at nearly every level, from 3rd grade through graduate school. As a researcher, I have spent time gathering data on students at every level from preschool through 12th grade. My teaching and research experiences have provided me with data that convince me that both small classes and small schools are crucial to a teacher's ability to succeed with students. (p. 8)

District 23 should also consider its teachers' needs and well being. Professor Wasley's 2000 study of small high schools in the city of Chicago revealed:

Students reported feeling safer and more connected with adults in these schools. Teachers reported a greater sense of efficacy, job satisfaction, and connection with parents, as well as more opportunities to collaborate with other teachers, build a coherent educational program, use a variety of instructional approaches, and engage students in peer critique and analysis. Parents and community members reported increased confidence in the schools. (Wasley, 2001, p. 23)

Howley's (2000) research of small schools stresses, "[m]any schools, though, would clearly benefit students if they were smaller, and students already attending smaller schools would probably be done educational harm if those schools were closed or if they were made larger." (p. 10) Students attending Eisenhower school would probably be done educational harm if they

were integrated into the larger school setting that already exists within the district. We could conclude that Ross, Sullivan and MacArthur may benefit if they were to be reconfigured as smaller schools with larger grade spans.

Making an Educated Choice

District 23 has provided some vague economic factors as reasons to consider narrowing its schools' grade spans, thereby creating larger elementary schools. What District 23 policymakers do not appear to have yet considered are the effects policy change may have on student achievement now and in high school, achievement equity, teacher satisfaction, family-school partnerships, and economic efficiency. One example of such effects not discussed above is that by consolidating the student population into grade level centers, the district's school boundaries would be erased. While some people believe that elimination of boundaries is a good thing that may end perceived social discrimination between the student and parent populations of the various district schools, the geographic and social benefits of neighborhood schools would be nullified. Also, with no boundaries to consider, what will stop the district from making a solely economic decision to close schools in favor of creating still larger schools? Howley (2002) asserts, "[t]he evidence rather clearly suggests that the tendency to create narrow grade-span configurations reinforces the bad habit of building larger and larger schools" (p. 28).

Only recently have scholars begun to feel confident that enough research has been done to make strong claims about grade spans, grade level configurations and school size. Unfortunately, most of today's educators and policymakers are products of large schools and large school districts, and this research flies in the face of what is considered common knowledge, that bigger is better. Those same educators and policymakers were taught that normal distributions of test scores along the "Bell Curve" are what teachers should aim for and what we should accept as evidence of accomplishment. Now, cognitive scientists, neurological biologists and educators have determined that all students have the capacity to learn. This evidence is what led the charge of "The No Child Left Behind Act of 2001" (Wasley, 2002, p. 8). This legislation creates higher teaching and student performance standards.

School District 23, like every other district in the country, will have to comply with this legislation by the end of this school year. This legislation aims to ensure that all children meet certain standards every year and all teachers meet certification standards by 2003-2005. District 23 will face many additional changes this and next year: elections for and turnover on the Board; a new superintendent and assistant superintendent; and a new principal at the middle school. It may be persuasively argued that the District should focus on successfully navigating these challenging changes, rather than on entirely reconfiguring its schools

Works Cited

Alsbaugh, John W. (1998, Sept/Oct). Achievement Loss Associated With the Transition to

Middle school and High School. The Journal of Educational Research, 92, 20-25.

Alsbaugh, John W. (2000, Fall). The Effect of Transition Grade to High School, Gender, and

Grade Level Upon Dropout Rates. American Secondary Education, 29, 2-9.

Bearwald, R. <rbearwald@mail.d23.org> (2002, September 13). October 1 Meeting

- [Personal e-mail]. (2002, September 13).
- Duncombe, William, Andrew Matthews and John Yinger. (2002). "Revisiting Economies of Size in American Education: Are We Any Closer To A Consensus?" Economics Of Education Review, 21, 245-262.
- Howley, Craig. (2000). "Research on Smaller Schools: What Education Leaders Need to Know to Make Better Decisions" The Informed Educator Series: Educational Research Service. (ERIC Document Reproduction Service No. ED 453 996).
- Howley, Craig. (2001, April). "The Disappearing Local School in Two Appalachian States" Paper presented at the annual conference of the Appalachian Studies Association. Linwood, WV. (ERIC Document Reproduction Services No. ED 451 018).
- Howley, Craig. (2002, March). Grade-Span Configuration. The School Administrator, 24-9.
- Illinois State Bd. of Education. (2001, November). "School Report Cards." <<http://www.isbe.state.il.us>>. 23 November 2002
- Moffitt, T.L.,III. (1996). An Evaluative Study of the Study of the Impact of Elementary Grade Span Structure on Family-School Partnerships. Unpublished Doctoral Dissertation, Miami University, Oxford, Ohio.
- Renchler, Ron. (2000, Spring). "Grade Span." Research Roundup: The National Association of Elementary School Principals, 16n3, 5-8.
- Wasley, Patricia A., and Richard J. Lear. (2001, March) Small Schools, Real Gains. Educational Leadership, 58n6, 22-7.
- Wasley, Patricia A. (2002, February). Small classes, small schools: the time is now. Educational Leadership, 59n5, 6-10.