



School Size Matters in Interesting Ways

School size is one of the most confounding issues currently facing schools, districts, and educators. Contrary to what administrators, teachers, and parents may feel about the effectiveness of smaller schools, the national trend has been to create larger schools, particularly middle and high schools. Research has found that middle schools with larger enrollments (800 or more students) increased dramatically over a five-year period from 1988 to 1993 (McEwin, Dickinson, & Jenkins, 1996). The benefits typically cited for promoting larger schools include greater variety of curriculum and programs, alternative student grouping strategies, and greater student and teacher diversity. Unfortunately, research examining the effect of school size on student learning is not as substantial as one would hope. While there is no one definitive answer to the school size issue, there is evidence supporting smaller schools, as well as a variety of strategies that educators have adopted to transform a large school into smaller, more personalized learning communities.

Recent studies addressing the issue of school size conclusively

Research on Middle School Renewal

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Overall school size plus interdisciplinary teaming with common planning time influence student achievement.

report that "smaller is better." According to data collected from a 1991-1992 national study funded by the National Association of Secondary School Principals (NASSP), the majority of middle level administrators surveyed thought that 400-799 students was the optimal size for a middle level school (Valentine, Clark, Irvin, Keefe, & Melton, 1993). Recently, Sue Galletti, the former director of middle level services for NASSP, summarized the current research on school size. In her article, Galletti emphasized the need for smaller middle level schools by citing research describing how small schools can better support academic excellence, promote more effective leadership, and are more responsive to the needs and characteristics of young adolescents (Galletti, 1999). Based on data collected for the recently published *Turning Points 2000*, Jackson and Davis argued that no middle level school should exceed 600 students (Jackson & Davis, 2000, p. 123).

This article will discuss the impact of school size on interdisciplinary teaming and developmentally appropriate classroom practices, school climate, and stu-

dent outcomes. The data for this research comes from nearly 140 Michigan middle grade schools that are part of the Michigan Middle Start Initiative, funded by the W. K. Kellogg Foundation (see Lewis, 2000 for a brief description of Middle Start). These schools all participated in the Center for Prevention Research and Development's (CPRD) School Improvement Self-Study in 1998-1999. The data were collected from over 2,400 teachers and nearly 30,000 students. The findings that emerge from this analysis are not intended to serve as recommendations for adopting a specific school size or grouping strategy. They only serve to highlight the apparent effect of school size on a sample of Michigan middle grade schools.

Michigan Middle Start study

In our analysis of Self-Study data from nearly 140 Michigan middle level schools we found that schools varied widely in size (i.e., student enrollment) from a low of 105 to a high of 1,606 with an average enrollment of 548 students. Based on an analysis of school size distribution combined with an analysis of team and classroom practices, school climate, and student outcomes (see discussion below), CPRD divided the Michigan sample into three size categories:

- schools with less than 500 students (n= 65 schools);
- schools with 500-749 students (n=53 schools); and
- schools with 750 or more students (n=21 schools).

In analyzing the effects of school size, we took note of several observations regarding the demographic characteristics of the Michigan schools. Given the size and rural nature of Michigan, it was not surprising to find that half (50%) of the schools are located in small town or rural areas with the remaining half in small urban/suburban areas (13%), urban areas (15%), suburban Detroit (13%), and urban Detroit (9%). Only three of the small town/rural area schools had enrollments of over 750 students. Sixty percent of the schools had less than 40% free and reduced-price lunch students. The 21 schools with the largest student enrollments (750 or more) tend to be located in suburban and urban

areas, but with only four schools in Detroit. The majority of the larger schools (67%) have less than 40% free or reduced-price lunch students. The larger schools are predominantly suburban schools with low percentages of free/reduced lunch students. Over a quarter (26%) of the Michigan schools can be characterized as having less than 500 students, being located in small town or rural areas, and having less than 40% free/reduced price lunch students. We were also curious to find out if there was any relationship between grade configuration and school size. Grade configurations for these schools varied somewhat with the majority (58%) being middle schools with 5-7, 5-8, or 6-8 configurations, 25% are traditional junior high schools (7-8 or 7-9), and 17% contain other grade configurations (e.g., K-8, K-12, 4-8, 7-12).

Impact of school size on middle level practices

CPRD's Self-Study measured several different types of interdisciplinary team and classroom practices, as well as parent contact and involvement, advisory activities, and school and work climate. These developmentally appropriate middle level practices have been identified by practitioners and researchers as effective teaching and learning strategies for promoting student success. Each practice, or scale, is based on a series of questions from the teacher survey regarding how frequently certain team and classroom instructional practices are occurring. Team and classroom practices include the frequency of coordination and integration of subjects, authentic instruction, student recognition, critical thinking skills, subject-specific enhancement practices, coordination of student assignments and assessments, parent contact and involvement, and contact with school resource staff (see Flowers, Mertens, & Mulhall, 2000a and 2000b for further discussion).

In comparing the three categories of school size, teachers in schools with enrollments of between 500-749 students generally reported the highest levels of team and classroom practices, parent involvement, advisory activities, and school climate. Teachers in schools with less than 500 students reported slightly higher levels of practices compared to teachers in schools with 750 or more students. This is somewhat surprising because you might expect smaller schools (less than 500 students) to have the highest level of practices, given that "smaller is better." Two possible explanations for the 500-749 enrollment group having the highest practices

are (a) more of these schools are teaming, or (b) more of these schools are grade 5-8 or 6-8 schools and, therefore, more likely to have adopted middle school practices. Teaming is not the explanation here since there are an equal number of schools in each enrollment category that are teaming. However, in terms of grade configurations, schools with less than 500 students have fewer middle school configurations, more traditional junior high configurations, and contain the majority of non-traditional types of grade configurations, such as 4-8, 5-12, and K-12. Thus it may be that, because of their grade configuration, these schools cannot as easily adopt certain middle school practices.

For purposes of comparison, we combined schools in the less than 500 category with those in the 500-749 category. When we compared this new category (less than 750) to the 750 or more category we found similar results to those above. Teachers in schools with less than 750 students reported higher levels of interdisciplinary team and classroom practices as compared to teachers in schools with 750 or more students. Similar to the previous analysis, these teachers also reported more frequent advisory practices and more positive school and classroom climate.

The combination of school size and grade configuration appears to have an impact on middle school practices in these schools. Compared to other grade configurations and enrollments, teachers in schools with middle school configurations (5-8, 6-7, and 6-8) and with enrollments of less than 750 students reported higher levels of team and classroom practices, advisory practices, and school climate. As might be expected, teachers in schools with traditional junior high school grade configurations reported some of the lowest levels of team and classroom practices.

Interdisciplinary teaming and school size

As previously mentioned, a national sample of middle level principals believed that smaller schools were optimal for teaching and learning. One way for schools with larger student enrollments to create smaller, more personalized learning environments is through interdisciplinary teaming. Typically, teaming consists of a group of two to four teachers representing the core academic subjects (i.e., language arts, reading, math, science, social studies) and a group of students that spend the majority of the school day together. In order for teachers on interdisciplinary teams to work together to plan, develop,

coordinate, and implement curricula, they need regular time to plan and work together as a group (i.e., common planning time). Unlike individual planning time, common planning time enables teachers to meet together as a team to plan, share, and discuss team, student, and curricular issues. Schools engaged in teaming with high levels of common planning time have higher levels of team and classroom practices and improved student achievement scores (Flowers et al., 2000a; Mertens, Flowers, & Mulhall, 1998). There are several key findings that emerge from reviewing the data on school size and interdisciplinary teaming.

1. *Schools engaged in teaming with high levels of common planning time and with less than 750 students generally had the highest average scores for team and classroom practices.*
2. *Schools with 750 or more students that were engaged in teaming with high levels of common planning time generally had higher levels of team and classroom practices as compared to other schools with 750 or more students.* The frequency of teaming practices in larger schools engaged in teaming with high levels of common planning time were very similar to teaming schools with less than 750 students. This suggests that when large schools create small learning communities and provide their teachers with high levels of common planning time, their levels of team and classroom practices are comparable to smaller schools.
3. *School size appears to have the most dramatic impact on teaming and classroom practices in schools not engaged in any level of interdisciplinary teaming.* With few exceptions, the larger Michigan Middle Start schools that were not engaged in any form of teaming had consistently lower frequencies of team and classroom practices than their non-teaming counterparts with smaller enrollments. In other words, regardless of size, schools engaged in teaming with high levels of common planning time generally reported higher levels of team and classroom practices.

Compared to schools with 750 or more students, we also found that teachers in schools with less than 750 students reported a slightly more positive school climate, more frequent contacts with parents, and

higher levels of advisory practices. These findings are even more pronounced for schools engaged in teaming with high levels of common planning time.

Student outcomes

The Self-Study measures several student adjustment and behavior outcomes, including self-esteem, depression, behavior problems, and academic efficacy (i.e., if I try harder, I can succeed). When we examined the student adjustment and behavior outcomes by school size we found that students in schools with enrollments of between 500-749 students had slightly higher levels of self-esteem and academic efficacy and lower levels of depression and behavior problems.

The impact of teaming with high levels of common planning time was also evident here, however, the differences were not as dramatic as we saw with team and classroom practices. Students in schools engaged in some level of teaming had consistently better adjustment and behavior outcomes than those in non-teaming schools. Teaming also helps to

Large middle level schools can create smaller teaching and learning environments for their students through interdisciplinary teaming.

alleviate the perception that students, and even teachers, may have of an overwhelming and impersonal large middle school. Students in schools with 750 or more students that were also engaged in teaming had adjustment and behavior scores similar to smaller teaming schools. Although large middle level schools cannot suddenly transform themselves into smaller schools, they can create smaller teaching and learning environments for their students through interdisciplinary teaming.

Unfortunately, an examination of student achievement data did not yield much in the way of relevant findings related to school size. Public schools in Michigan administer a standardized student achievement test called the Michigan Educational Assessment Program (MEAP). Contrary to the research findings already presented, Michigan Middle Start schools with 750 or more students had slightly higher student achievement scores, as com-

pared to schools with less than 750 students. This, however, is not surprising if we consider the socio-demographic characteristics of the schools with 750 or more students. Over two-thirds of the schools with 750 or more students have less than 40% free/reduced lunch students. While found in all areas of Michigan, they tend to be more concentrated in small urban/suburban areas. Finally, nearly 90% have middle school configurations (i.e., 6-8 grades). These schools that are scoring slightly higher on student achievement tests are predominantly affluent, suburban, middle-grade schools. Given their resources, it is not surprising to find that they would score well on achievement tests. What is more interesting is the finding that schools with 500-749 students have higher achievement test scores than schools with less than 500 students.

CPRD's prior research on the Michigan Middle Start schools has shown the positive impact that interdisciplinary teaming can have on student achievement scores (Flowers, Mertens, & Mulhall, 1999). In order for teaming to be effective, it needs to be schoolwide (for all middle level grades) and it needs to be accompanied by relatively high levels of common planning time. In the Michigan Middle Start schools that were teaming in all middle level grades and that had high levels of common planning time, students had consistently higher student achievement scores, regardless of school size.

Summary

The data presented here serve to illustrate that there is no simple answer to the issue of school size. These data, however, highlight several interesting aspects of school size. Schools that have less than 750 students, have a middle school grade configuration, and are teaming with high levels of common planning time have the highest levels of team and classroom practices, parent contact and involvement, advisory activities, and a more positive school climate. Furthermore, regardless of size, schools engaged in teaming with high levels of common planning time generally have higher team and classroom practices. Finally, schools with over 750 students that were teaming with common planning time showed similar results as compared to smaller teaming schools. The good news for smaller schools is that they tend to have more frequent middle school practices, especially schools with middle school grade configurations and those that are team-

ing with common planning time. The good news for larger schools is that teaming with common planning time can improve their practices in the same way as size does for smaller schools. Teaming makes smaller schools better and larger schools smaller.

Editor's Note: See the theme issue "The Power of Smallness in Urban Middle Grades Schooling," *Middle School Journal*, March 2001, for more perspectives on the effects of school size.

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