THE RURAL SCHOOL AND COMMUNITY TRUST

The Hobbit Effect:

Why Small Works in Public Schools

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I. Introduction

There is a battle going on out there, and it's not pretty and certainly not rational.

Across the country, states are pushing to close their small rural schools with the mistaken hope of saving money. This struggle is currently happening in almost all regions of the country and includes states as diverse as Arkansas, Iowa, Kentucky, Maine, Nebraska, South Carolina, and South Dakota ("Anything but research-based," 2006).

What is especially irrational about this trend is that these efforts persist in spite of overwhelming evidence that smaller schools are beneficial for kids. For example, research evidence documents that when socio-economic factors are controlled, children in smaller schools:

✦ Are more academically successful than those in larger schools.
✦ Have higher graduation rates.
✦ Are more likely to take advanced level courses.
✦ Are more likely to participate in extra-curricular activities (Cotton, 1996).

In addition, small schools are frequently the glue that binds together small communities, serving as their economic and social hub. Small villages that lose their schools lose more than a building—they lose their collective cultural and civic center.

The battle is even more illogical when compared with the opposing trend in urban areas, where reform efforts concentrate on breaking down dysfunctionally large schools and forming new smaller learning communities. Urban educators, recognizing the proven advantages of small schools, are actively pursuing a "smaller is better" model. Some of these efforts are state-supported, while others are financed through private sources. The Bill and Melinda Gates Foundation, for example, has pumped millions into these urban reform strategies.

In short, it is clear that small works in schools—this report explores why.

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*The main characters of JRR Tolkien's books, Hobbits are small in size, but huge in courage and unrelenting in their focus on attaining their goals. In addition, they fully appreciate their rural roots and gladly return home when their quest is fulfilled.

Our Research Approach

To investigate why small works, we examined current literature—looking for typical attributes of smaller schools that have a positive effect on student learning and well-being. We included elements in this report that are either normally found in most small schools or are more common in smaller schools than in larger schools.

This report focuses on attributes of small schools where there is a general consensus in the research about their positive impact for kids. Our literature review, however, is not perfect. We may have missed some relevant studies and in some areas, more research is called for. Also, for some topics, there are research studies that counter the claims made here. While we acknowledge some of the gaps and inconsistencies, we feel confident that this report represents the weight of the current evidence about why small works in schools and captures the summary judgment of the majority of scholars.

Also, we intentionally avoid an exact definition of what constitutes "small" throughout this report. As discussed by Howley (2004), smallness is relative. He uses the adjective "smaller" to recognize the "variability of school size as it naturally appears" (p. 3), a practice we occasionally adopt in this paper also. To set an arbitrary cut-off point between small and not-small is fruitless, and it distracts from the real struggles en-countered by rural communities of all sizes to maintain their local schools.

Our avoidance of an exact cut-off number permits a more general exploration of the issue of school size, since various studies use different standards. Researchers on small high schools, for example, cite enrollment numbers varying from 100 to 400. Other studies describe school size using enrollment in relation to number of grades within a school (see the discussion about grade-span later in this report). Lastly, some researchers use a continuum of enrollment sizes and correlate the incidence of a particular variable with schools of all sizes.[1] By side-stepping an absolute definition of "small," we were, therefore, able to consider a wider range of research findings in order to expose reasons why small schools are effective.

Our purposes in this report are transparent. First, we want to support those in rural communities who believe, as we do, that good schools, close to home are the right of every child. In rural communities, that means keeping small schools open and making them the best schools they can be. Second, we believe that identifying key effective elements of "smallness" may help to improve schooling in places where small schools are coerced, or mistakenly choose, to operate as if they were larger than they are.[2] The effective characteristics of small schools can be lost even in small schools if school leaders chase the illusion that bigger is better. We aim to dispel that illusion.

> ### Ten Research-based Reasons Why Small Works
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> 1. There is greater participation in extra-curricular activities, and that is linked to academic success.
> 2. Small schools are safer.
> 3. Kids feel they belong.
> 4. Small class size allows more individualized instruction.
> 5. Good teaching methods are easier to implement.
> 6. Teachers feel better about their work.
> 7. Mixed-ability classes avoid condemning some students to low expectations.
> 8. Multiage classes promote personalized learning and encourage positive social interactions.
> 9. Smaller districts mean less bureaucracy.
> 10. More grades in one school alleviate many problems of transitions to new schools.

II. The Top Ten List

Our research review uncovered ten elements of smallness that are associated with academic and/or social and emotional benefits for students. For each area we looked for: evidence that this element was characteristic of smaller schools, evidence of its benefits, and, if possible, theories about why the attribute confers advantages on children.

We present these ten areas roughly in order of their perceived positive impact on students and the strength of the available research base. However, this order is a crude approximation only; all of these areas have demonstrated positive effects.

1. Extra-Curricular Participation

A higher percentage of students in smaller schools participate in extra-curricular activities than do so in larger schools. And students in small schools tend to participate in a wider variety of activities than students in larger schools and find these activities more satisfactory. Indeed, according to one scholar, "the greater and more varied participation in extracurricular activities by students in small schools is the single best-supported finding in school size research" (Cotton, 1996, p. 5).

Additional research in the past decade has reaffirmed this finding (e.g. Coladarci & Cobb, 1996; Crosnoe, Johnson, & Elder, 2004). These large-scale studies also found that as school size increases, participation rates in extra-curricular activities drop steadily.

Why is this important? Extra-curricular participation is associated with several positive outcomes for students: they have more positive attitudes about their school experience and learning, have higher self-esteem, and have higher expectations about obtaining a college degree (Lipsomb, 2005; Mahoney & Cairns, 1997; O'Brien & Rollefson, 1995). Extra-curricular participation is also related to higher grade-point averages, higher standardized test results, and better attendance rates (National Center for Education Statistics [NCES], 1995; Mahoney & Cairns, 1997)[3].

The benefits of extra-curricular participation are also found in other countries and for a variety of student subgroups. For example, studies in Portugal and Australia (Fullarton, 2002; Peixoto, 2004) indicate that participation in extra-curricular activities is related to higher academic achievement, greater school engagement, and higher self-concept. Studies of Latino youth highlight the association of participation in after-school activities and lower dropout rates (Flores-Gonzalez, 2000; Nesman, Barobs-Gahr, & Medrano, 2001).

Why do small schools lead to greater extra-curricular participation? One explanation is that in any school there are a limited number of slots for student participation and leadership (Barker & Gump, 1964, as cited in Guthrie, 1979). Schools of any size might require at least one person to play the trumpet in the school band, to write about school athletics for the school newspaper, or to be goalie on the soccer team. In schools with limited enrollment, almost every student is needed for these activities to occur. In small schools, no student is extraneous.

In addition, there is also the obvious "convenience factor" small schools provide. Larger consolidated schools are located further away from many families' homes. This extra physical distance creates more travel time to and from school, and more inconvenience for parental and student shuttling for after-school activities.

2. Safety and Discipline

Probably the second most common finding of school size research is that smaller schools tend to be safer environments than larger schools. Small schools exhibit fewer violent incidents and experience less vandalism, theft, truancy, substance abuse, and gang participation (Cotton, 1996). Large-scale national surveys, for example, show that reports of violence and discipline problems decrease with smaller school size (NCES, 2000).

These consistent findings are noteworthy. Discipline problems are distracting and interrupt learning activities. Students in safe settings learn more, are more focused, and feel more positively about school, subject matter, and learning in general. An environment free from violence, threats, and bullying are prerequisites for effective learning/schooling (Klonsky, 2002a).

> Smaller schools are safer becase the climate in small schools fosters closer relationships between the adults and students, and among the students themselves… It is difficult to be abusive to others whom you know and value.

Why are smaller schools safer? Research indicates that the climate in small schools fosters closer relationships between the adults and students, and among the students themselves. As a result, students feel more engaged with the school community and these close relationships are accompanied by greater mutual respect. It is difficult to be abusive to others whom you know and value. Students themselves recognize this interaction. "When small-school students were asked why they fight less than students in the host [larger] school, they answered, 'Because we know one another'" (Wasley, Fine, Gladden, Holland, King, Mosak, & Powell, 2000, p. 36). Researchers in this study concluded that small schools are places where students "build relationships and the skills to cooperate, disagree, and negotiate with students and teachers" (Wasley et al, 2000, p. 36).

3. Student Attitudes and Affective Responses

Another aspect of school climate is "school connectedness" or a sense of belonging. This refers to a student's perception that he or she is part of the school community and cared for at school. Heightened school connectedness has been linked to less violence, substance abuse, suicidal thoughts, and pregnancy, along with lower dropout rates (Blum, McNeely & Rinehart, 2002; McNeely, Nonnemaker & Blum, 2002).

Connectedness is often proposed as an antidote to alienation. This is especially critical during early adolescence when feelings of alienation can lead to discouragement about schooling, more risky behavior, and dropping out. Large-scale research has identified the attributes of schools that are associated with school connectedness. Researchers found that school connectedness is strongest in schools where students get along with and respect each other (Blum et al, 2002; Klonsky & Klonsky, 1999). Not surprisingly, research on adolescent alienation identifies school size (though not class size per se) as one characteristic strongly associated with student belongingness. "In smaller schools, students, teachers, and school administrators all have more personal relationships with each other…They know who you are. This is important to keep kids engaged and a part of school" ("Classroom management," 2002).

Similarly, literature on resiliency (a child's ability to overcome social/environmental disadvantages) also underscores the importance of school climate factors. For example, researchers have identified five critical themes in fostering resilience: feeling successful, feeling valued, feeling needed, feeling empowered, and feeling encouraged and hopeful (Pikes, Burrell, & Holliday, 1998). Small schools are more likely to exhibit these characteristics, again because of the close relationships students have with teachers and with other students, as well as the sense of being needed that leads to more extra-curricular activity noted above.

4. Class Size

Small class size is not limited, of course, to small schools. However, we examined enrollment data using the Common Core of Data (CCD) 2003-2004 and found that there is a statistically significant positive correlation between school size and class size: .261—significant at $p < .001$. Smaller schools tend to have smaller class sizes.[4]

Most research studies indicate that small classes, especially in grades K-3, are associated with higher academic achievement. Large-scale studies investigating the impact of small class size have examined Indi-

ana's Project Prime Time, Tennessee's STAR project, Wisconsin's SAGE project, and California's Class-Size Reduction Act. With the exception of less robust findings in California, all of these studies have found consistent and substantial impact on student achievement when classes are smaller. California's experience with their Class Size Reduction Act showed positive results, but of a smaller magnitude than in the other states[5] (Biddle & Berliner, 2002).

It should be noted that there are a few studies that indicate that class size has no, or little appreciable impact on student learning. For example, a study by Tomlinson (1988, as cited in Pritchard, 1999), using national data from the 1950s to 1980s, found no consistent impact on achievement due to class size. Similarly, a study in Florida using data from 1993-94 showed no relationship (Florida Department of Education, 1998, as cited in Pritchard, 1999). Studies like these have prompted some to conclude that investing in smaller class size is an unwise public policy (notably Hanushek, 1997). However, other researchers found these studies to lack some crucial design and statistical controls, and to have major data limitations (Biddle & Berliner, 2002).

> **Research finds consistent and substantial impact on student achievement when classes are smaller, especially in lower grades.**

In general, research evidence supports the following:

✦ Small class size is associated with higher academic achievement, especially in lower grades (K-3).
✦ Achievement gains are most pronounced when class size is under 20.
✦ The achievement gains due to small class size are greatest among disadvantaged and minority students.
✦ The academic effects of small classes in lower grades persist in middle and high school years, even if students are subsequently moved to larger classes.
✦ The longer students are exposed to small class size, the more they maintain their academic advantage.
✦ Achievement gains are found in all subject areas.
✦ Research on the effects of small class size on achievement is inconclusive in the upper grades (Biddle & Berliner, 2002).
✦ No research yet has shown a positive effect from large class size.

All of the above conclusions focus on academic achievement as measured by standardized tests. Other studies have also linked smaller class size in the lowest grades to lower dropout rates and fewer grade retentions (Finn, Gerber & Boyd-Zaharias, 2005; Pate-Bain, Fulton, & Boyd-Zaharias, 1999; Waymack & Drury, 1999). In addition, other research indicates that small classes are characterized by fewer discipline problems, closer interactions between teachers and students, more teacher enthusiasm, and more instructional time (Zahorik, 1999).

Some researchers have tried to understand the reasons why small class size is advantageous, especially for students in the earliest grades. Most educators believe that small classes are especially effective since they allow teachers to individualize instruction (Zahorik, 1999).

Berliner and Biddle also take a developmental approach to understanding why class size is especially advantageous for young students. They theorize that:

> "Reducing class size in the early grades 'works,' at least in part, because it is in these grades that children are first learning the rules of standard classroom culture and forming ideas about whether they can cope with education. Many children have difficulty with these tasks, and their efforts are greatly aided when they can interact with teachers on a one-to-one basis—a process more likely to take place when the class is small...In addition, teachers in small classes have higher morale, and this enables them to provide a more supportive environment for initial student learning. But learning how to cope well with school is basic to educational success, and those students who solve this task when young will thereafter carry broad advantages, in the form of more effective habits and more positive self-concepts, that will serve them in later years of education (and presumably the wider world beyond)" (2002, p. 22).

Berliner and Biddle (2002) conclude their literature review stating that "no other educational reform has

yet been studied that would produce such striking benefits..." (p. 25). They acknowledge that this policy will increase educational costs, but assert that the benefits from reducing class size are long-lasting and substantial.

5. Instructional Practices

There is a growing body of literature that identifies certain instructional approaches as leading to increased student learning. These strategies include:

✦ Flexible scheduling, including longer blocks of time (Fine & Somerville, 1998)
✦ Looping[6] (Fine & Somerville, 1998; Hanson, 1995; Northeast and Islands Regional Educational Laboratory at Brown University, 1997)
✦ Integrated (or interdisciplinary) curriculum (Lake, 1994; Flowers, Mertens & Mulhall, 1999; Wasley et al, 2000)
✦ Cooperative/group learning experiences (Wasley et al, 2000)
✦ Heterogeneous classes (Mohr, 2000)
✦ Multiage (or multi-grade) classes (Kinsey, 2001)
✦ Active, experiential (project-centered) learning (Legters, 1999)
✦ Individualized (or personalized or differentiated) instruction (Fine & Somerville, 1998)

To what extent are these strategies commonly found in small schools? Though we don't have definitive data about the occurrence of many of these approaches, there is some evidence that these types of reform efforts tend to flourish in smaller settings, where obstacles to implementation are minimal. For example, using the School and Staffing Survey, 1999-2000, we found that looping and heterogeneous grouping were more common in smaller schools than in larger schools. Also many of these reform efforts are simply easier to implement in smaller schools and/or in schools with smaller class size. For example, case studies of small schools indicate that smaller learning communities make flexibility of scheduling and individualized learning experiences possible (Wasley et al, 2000).

Organizational literature tends to confirm this by linking smaller organizations with more efficient and productive implementation (Walberg, 1994). That is, in larger structures, excessive "coordination costs," "in-

formation problems," and "bureaucracies" (Walberg, 1994), prevent innovations from being implemented in productive ways. As recognized by the United States Department of Education, "Because change is easier to implement in a smaller setting, smaller learning environments create a context hospitable to reform" (U. S. Department of Education, 2001, p. 3). In addition, some studies show that teacher-initiated reform strategies were more likely to occur in smaller high schools (Larson, 1991). Researchers explain that this possibly occurs because teachers have more autonomy in small schools and collaborate more often (Klonsky, 2002a; Wasley et al, 2000).

Though limited at this time, there are studies that link these practices with improved student attitudes toward schooling and enhanced student learning. For example, integrated curriculum has been demonstrated to improve student motivation and student effort, and lead to deeper conceptual knowledge than traditional separate subject instruction (Lake, 1994). Similarly, research on middle school reform has found that interdisciplinary team teaching and instruction is associated with higher academic achievement (Flowers et al, 1999).

> **Instructional practices such as flexible scheduling, looping, multiage classes, and experiential learning tend to flourish in smaller settings.**

Most of the above strategies are intentional reform strategies, designed to improve student learning. The two possible exceptions are the use of heterogeneous grouping and multiage classes. These two areas can be, and often are, intentional reform efforts. However, in the case of small schools, these two approaches may also be practical and necessary—structural byproducts inherent in small size. For example, in the case of heterogeneous grouping, when schools are very small, it is usually not realistic (nor economically feasible) to have different classes for students deemed of different abilities. For this reason, and because there is more research about these two areas, we discuss them separately in subsequent sections.

6. Teacher Attitudes and Morale

Smallness impacts educators as well as students. Teachers in small schools tend to be more satisfied with their positions, have less absenteeism, collaborate more with colleagues, and take greater responsibility

for student learning (Lee & Loeb, 2000; Wasley et al, 2000). In addition, small schools are places where teachers have a stronger sense of professional community and more opportunities for working as a team (Mohr, 2000). Also smallness is associated with teachers having more autonomy and initiating innovative reforms more often on their own (Larson, 1991; Lee & Smith, 1994). Lastly, research indicates that smaller class size (a common attribute of small schools) is a significant factor in reducing teacher turnover (Carter & Carter, 2000).[7]

Some of the more recent literature on small learning communities emphasizes that professional development in small schools is often perceived as more valuable and effective (Klonsky, 2002b; Wasley et al, 2000). It tends to be more focused on school priorities, ongoing, and peer-led—all qualities that teachers and researchers have identified as elements of professional development that increase student learning.

> **Teachers in small schools tend to be more satisfied with their positions, have less absenteeism, collaborate more with colleagues, and take greater responsibility for student learning.**

Why are teacher attitudes and morale important? Research shows that an increase in teacher morale is linked to increased student learning (Lumsden, 1998; Lee & Loeb, 2000). And some researchers speculate that student achievement gains from attending small schools occur, at least in part, because of indirect pathways starting with positive teacher attitudes. For example, Lee & Loeb (2000) found that teachers in small schools exhibit greater "collective responsibility" toward student well-being and success than teachers in larger schools, which in turn translates into higher student academic performance. They suggest that:

> "A reasonable mechanism might be that a smaller organizational dimension would facilitate personalized social interactions among school members. Teachers who interact more often with fewer students know their students better. By knowing students better, teachers are likely to worry more about their failures, provide more help directed toward improvement, take responsibility for disciplining everyone and invest more fully in improving the whole school (… items included in the collective responsibility composite)" (p. 23).

7. Heterogeneous Grouping

Heterogeneous grouping (also known as mixed-ability or de-tracked grouping) is the practice of placing students with a wide range of abilities into the same setting and exposing all students to a similar curriculum. The opposite of heterogeneous grouping is usually called tracking (or homogeneous or like-ability grouping). In spite of the varied terminology, the common element here is that students are sorted into different classes based on actual or perceived academic ability.

Tracking is an extremely common practice. It is difficult to find elementary school classrooms, for example, that do not use any homogeneous groupings, at least for part of the day (Glass, 2002). In many schools, entire classrooms are tracked. Tracking is an educational issue that is difficult to discuss rationally without becoming sidetracked by personal values. Both advocates and opponents of tracking tend to be passionate about their point of view, which can distort reasonable debate. Supporters of tracking assert that high achievers are held back in mixed-ability classes. Opponents believe tracking perpetuates classism and racism through biases and unfair sorting mechanisms.

What does the research say about the impact of tracking?

1. In general, tracking has a negative impact for children placed in the lower tracks. Academic growth is curtailed by this placement. Students in the lowest tracks are less likely to take more advanced courses. Also, students in low tracks often develop depressed self-esteem and heightened feelings of discouragement about schooling and their future (Glass, 2002; Oakes, 1985).

   This is not surprising. Research shows that low track classes are most frequently taught by teachers with less experience and subject-area expertise than high track classes. The curriculum in low track classes tends to be "watered down," and teachers in these classes have lower expectations that students will be successful. In addition, there

is ample evidence that students assigned to lower track classes tend to be disproportionately children of color and poor (low socio-economic status [SES]) (Oakes, 1985).

2. The impact on students placed in higher tracks is mixed. Most studies show no effect (Slavin, 1987, 1990). However there are a few studies indicating that advanced-level students tend to do slightly better when placed in high tracked classes. These studies tend to hold true only for certain populations and in certain subjects. For example, Hoffer (1992) found a very small achievement gain for advanced middle-level students in tracked math and science classes. Slavin (1990), however, found no effect in high school level classes, across all subjects except social studies—and that effect was negative.

> **Small schools tend to use heteroeneous groupings more frequently; one reason may reside in the small school culture of all-inclusiveness.**

3. Heterogeneous grouping combined with high expectations and advanced curriculum is advantageous for all students (Burris, Heubert, & Levin, 2006).

    A recently released report (Burris et al, 2006) examined the impact of heterogeneous and homogeneous grouping combined with advanced-level curriculum. This study found that when mixed-ability grouping is combined with accelerated curriculum, academic achievement is higher across the board. Students from all backgrounds (low SES, high SES, initial low achievers, initial high achievers, and students of color) demonstrated higher achievement in mixed-ability classes than students in tracked classes. In addition, students in mixed-ability classes completed more advanced math courses, performed better on Regents exams and on national standardized tests, and were more likely to meet or exceed state standards.

    These results confirm that demanding curriculum and high expectations, often part of higher tracked classes, has been responsible for higher achievement. And that these elements will also lead to higher achievement among students who traditionally would be placed in low-level classes.

How is this related to small schools? We found by analyzing the School and Staffing Survey[8] that the incidence of tracking is much lower in smaller schools than in larger schools. Small schools tend to use heterogeneous groupings more frequently.

Why? First, and most obviously, many small schools just don't have enough kids to sort. There may only be enough students for one first-grade class, one second-grade, and so on; when the curriculum gets more specialized in high school, the opportunities for tracking are even smaller. Many small high schools only have enough students for one class even in core curriculum courses such as algebra.

A second explanation may reside in differences of small school culture. As discussed previously, small schools are places where all students are known and there is a general culture of reciprocal all-inclusive caring for one another. Indeed, one researcher wondered whether the advantages of heterogeneous grouping have less to do with the practice itself and are more a reflection of unmeasured school climate variables (Hoffer, 1992). He states that perhaps "non-grouped [non-tracked] schools are animated by an egalitarian ethos..." and a general school culture that does not allow "slower" students to fall by the wayside (p. 19).

8. Multiage Classes

One common cost-saving measure used by small schools facing declining enrollment is to institute multiage classes. When enrollment becomes too small to financially support separate classrooms for each grade (primarily in the elementary levels), then schools sometimes combine grade levels within one classroom.

In addition, multiage configurations may be helpful when schools are faced with economically awkward numbers of students in each grade. For example, a school with 42 first graders in a single-age classroom setting can have two teachers with 21 each or three with 14 each. If that school has 42 second graders, it has the same choices. The difference between four and six teachers is a lot, both in education quality and cost. But if that school uses multiage classes, it can choose to have 5 grade 1-2 teachers with 16 or 17 students each.

Combining grade levels is a practice that is frequently debated by parents, teachers, and researchers. Some believe that multiage classes confer academic and social advantages on students. Others believe that combining grades is detrimental, at least for some subgroups of students. Further complicating the debate is the wide range of terminology used to describe the phenomenon. Terms such as multiage, multi-grades, split-grades, non-graded, un-graded, and mixed-age are used in various studies (Kinsey, 2001). In this report, we intentionally avoid more nuanced distinctions among these terms and examine the practice of including more than one grade level in a single classroom—whether for economic or pedagogical reasons.

Though research on the academic impact of multiage classrooms is mixed, the majority of studies indicate that they have a positive impact on academic achievement, and that these results are particularly pronounced for children of color, males, and poorer students (Kinsey, 2001).

One specific area of concern on the part of some educators is how multiage classrooms affect high ability students. Are the curricula or instructional approaches commonly used in multiage classes watered down to accommodate a wider range of ages, and does this short-change more advanced students? Here research evidence is also mixed, with some studies indicating no impact of multiage classes and others showing a positive impact. None of the research, however, as reviewed by Linley (1999) indicates a negative outcome of multiage on high achieving students. At the very least, high ability students are not held back in multiage classrooms as compared to single grade classrooms.

Linley (1999) explains these findings this way:

"...a teacher of a multi-age class cannot, by definition, have similar expectations of all the students in the class. Thus a focus on individual differences is more likely in practice rather than simply in theory. Such a focus would imply that the teacher would be much more likely to use small groups in his/her teaching and

to form and reform these groups on a regular (and probably frequent) basis" (p. 205).

And,

"In a multi-age setting, the opportunities for both types of grouping [homogeneous and heterogeneous] should, on average, increase because of the increased range of development/diversity in the class. A talented child is therefore much more likely to be able to find a classmate who 'matches' on some variable or in one of Gardner's intelligences" (p. 205-206).

In addition, and even more consistently, research indicates a positive impact of multiage classes on social indicators. Students in multiage classes "demonstrate more positive attitudes toward school, greater leadership skills, greater self-esteem, and increased prosocial and fewer aggressive behaviors, compared to peers in traditional graded classrooms" (Kinsey, 2001, p. 1). Educators believe these positive social results may reflect classrooms that mimic a more family-oriented climate, with sharing and caring for others ingrained in the daily experience (Kinsey, 2001).

9. District Size

Another, often over-looked, characteristic of small schools is that they tend to be located in small districts. The correlation between school size and district size is .381—significant at the .001 level.[9] As district size grows, so does the enrollment of schools in these districts.

So what? A number of research studies indicate that students do better in smaller districts (defined by total student enrollment, not geographic area). For example, Abbott, Joireman, & Stroh (2002), Howley (1996), and Walberg (1994) found small districts were associated with higher academic achievement, and that this association is especially pronounced for high poverty districts. Walberg's study examined National Assessment of Education Progress (NAEP) data, while the others used other state-level standardized tests. In another example, Greene & Winters (2005) found that smaller districts had higher graduation rates.

> **Multiage classrooms have a positive impact on academic achievement...results that are particularly more pronounced for children of color, males, and poorer students.**

Research also indicates that smaller schools perform better when they are in small districts than when they are part of larger districts, and that even larger schools perform better in smaller districts than in larger ones (Howley & Bickel, 1999; Johnson, Howley, & Howley, 2002).

Not all research supports these results however. A study in Denmark (Heinesen, 2004) found that larger districts are associated with greater expectations of attaining education beyond the compulsory school level. Cox (2002) found a positive impact on achievement in the lower grades, but not at the high school level. And another study by Trostel & Reilly (2005) found no difference. Obviously more research is called for in this area.

In spite of these few inconsistent results, the implications are important. District-level consolidation is being considered in many states (e.g., in Arkansas and Nebraska). Officials look for "economies of scale" through consolidation as one possible strategy to reduce education costs. Though even the cost savings are debatable (Eyre & Finn, 2002), the political appeal of administrative consolidation is strong. It provides an attractive alternative to forcing consolidation of schools, at least initially, and eliminates the local political apparatus that shelters small schools from consolidation.

Assuming that the research indicating positive impact of small districts is an accurate picture, it is interesting to speculate on the reasons this may be true. There are at least three possible reasons. First, most probably, similar dynamics operate between superintendents and school-building principals as with principals and teachers, and with teachers and their students. Smaller numbers translate to more personalization. Superintendents can individualize their supervision and support of school-level principals, since they know them well and understand the school context.

In addition, as stated previously, studies on effective policy implementation indicate that the scale of any organization makes a difference. It is much easier to effectively implement new strategies in smaller districts.

> **Smaller schools perform better when they are in small districts than when they are part of larger districts; even larger schools perform better in smaller districts than in larger ones .**

Lastly, some of the more recent literature about "small learning communities" stresses the importance of school-level autonomy (Wasley et al, 2000). In highly decentralized systems, a rural or small town district may only include one or two schools, as is common throughout the West, the Midwest, and Northern New England. In such places, schools are practically synonymous with districts and have a significant role in creating their own budgets, developing their own curriculum, selecting their own instructional materials, making local hiring decisions, and setting their own schedules. Research on small learning communities suggest that school-level decision-making is associated with improved academic performance (Wasley et al, 2000).

The association of district size, school size, and student achievement is still very much an emerging research area. However, if the initial research holds true, then the current frenzy to save money by creating larger districts needs critical re-examination. Evidence suggests that these larger governance structures are detrimental to advancing student learning.

10. Grade Level or Grade-Span Configuration

Grade-span or grade level configuration are two terms that define how many discrete grade levels are contained within one school building. Public schools in the United States are currently configured in a wide variety of grade-spans. Some schools contain 13 or 14 grade levels, while other schools contain only one or two grades. Coladarci and Hancock (2002) listed common configurations as K-12, K-8, K-5, 6-8, 7-12, 7-8, and 5-8, with a significant number of schools in the "other" category. In some districts, ninth grade free-standing "academies" are becoming popular, with only a one-year grade-span (Reents, 2002; Rourke, 2000).

Grade-span configuration may initially be seen as irrelevant in the discussion of the impact of school size. However, one of the byproducts of the movement to consolidate small schools has been to create larger regional schools that serve a more limited range of grade levels (Howley, 2002b). For example, a typical district

consolidation might close five small K-12 schools and form one or two K-5 schools, one 6-8 school, and one high school, grades 9-12.

Though a vanishing breed, schools that still serve a wide grade-span tend to be small and rural. Thus small and rural schools are particularly vulnerable to being reconfigured into schools with narrow grade-spans. For example, currently there are only 1,366 PreK-12 or K-12 schools in the United States.[10] Of these schools, 75% have a student enrollment of 500 or fewer. Fifty-seven percent have 300 or fewer students. Likewise, the majority of PreK-8 or K-8 schools are also small. CCD indicates that there are 5,226 PreK- or K-8 schools in the country. Of these, 69% have 500 or fewer students. And most of these smaller schools with wide grade-spans are located in rural places. For example, 80% of PreK- or K-8 schools with 300 or fewer students are situated in rural communities (CCD locale codes 7 or 8).

The practice of restructuring schools into institutions with a narrow grade-span has several consequences. First, as community-centered K-12 schools close, children are bussed longer distances to a district-wide school of the appropriate grade level. More children are bussed, too, because fewer kids attend a school within walking distance. And lastly, the number of different schools a child attends during his or her academic career increases, meaning more school transitions.

In many cases, schools with more limited grade-spans are still small, though the "cohort size" (number of students in a particular school who are in the same grade level) may be large. For example, a 300-student middle school (grades 6-8) might have an average of 100 students in each cohort. A 300-student K-12 school, however, would have only 23 students in each cohort.

This has led some researchers to ask whether small schools with narrower grade configurations still retain the qualities that confer the advantages of smallness.[11] A question might be: Is the 300-student school consisting of grades 6-8 as advantageous for kids as the 300-student K-12 school?

> **Wide grade-span configuration impacts students academically and socially, especially middle graders: they tend to do better academically, have lower dropout rates and fewer discipline problems when grouped with elementary grades, in contrast to high school grades.**

We don't have definitive answers...yet. However a body of research is beginning to show that for some students, the advantages of small schools are not merely a factor of total enrollment size. Cohort size is also relevant.

For example, research on middle-level schooling shows the following:

1. Students in the middle grades (6th, 7th, and 8th) tend to do better academically when grouped with elementary-level grades (i.e. in K-8 schools, in contrast to 6-9 schools, or 8-12 high schools) (Alspaugh, 1998, 2000).

2. In addition, middle school dropout rates are lower, self-esteem is higher and participation in extra-curricular activities is increased with more inclusive elementary school configurations (i.e., K-8) (Simmons & Blyth, 1987 as cited in McEntire, 2002).

3. There are fewer discipline problems among middle-level students when grouped with elementary school grades. For example, suspension rates for 6th grade boys are highest in junior high schools and middle schools, and lowest in elementary school configurations (Franklin & Glascock, 1996).

Why might this happen? Researchers speculate that one prime factor is the number of transitions to new schools. Alspaugh (1998, 2000), for example, found that each transition to a new school was accompanied by an achievement loss. Educators speculate that school transitions require social and psychological adjustment and are frequently quite stressful (Seidman, 1994 as cited in Seller, 2004).

One scholar described the impact of school transitions this way:

> "The transition to a middle or junior high typically requires accommodation to an increasingly large, impersonal and bureaucratic educational milieu. Youth need to adjust to

dramatic increases in disciplinary specialization, rules and regulations and the numbers of teachers and other school personnel with whom they have only limited and circumscribed contact. Similarly they are confronted with a new set of school peers and interpersonal "tests." Such disruptions in daily social regularities require a restructuring of social roles. (Seidman, 1994, p. 508 as cited in Seller).

The above description of a typical middle school/junior high school stands in stark contrast to the personalized environment of typical small schools. Thus it may be that the advantages of connectedness and close relationships are more readily available to students when cohort sizes are small, as well as when schools are small. Though more investigation is needed, current research suggests that it is wise to keep schools small both in absolute terms and in cohort size and to limit the number of school transitions experienced by students.

III. Conclusions

The ten attributes described above roughly fall into three categories: relationships, instructional strategies, and structural elements. Attributes such as students' sense of belonging, school safety and teacher morale are closely linked to the quality of interpersonal relationships found in small schools. Other elements such as looping, integrated curriculum, experiential learning, and individualized instruction can be viewed as instructional approaches implemented to improve student learning. And factors such as class size, district size, and grade-span configuration are all structural components of school systems.

> Smaller communities are typically places that naturally result in close interpersonal connections, where individuals know, share with, and care for each other. Smaller schools mirror these qualities.

These categories are not, however, discrete, or mutually exclusive. There are many areas of overlap. For example, multiage classes can be considered as both an instructional approach and a structural element. Similarly, extra-curricular activities can be grouped

as an instructional strategy and/or as a byproduct of close relationships. The common element in all three categories is the unmistakable value people place on intimacy in institutions. Call it the human factor.

The power of close relationships. Out of the three categories we believe that the area of relationships is most critical for positive student outcomes, most uniquely characteristic of small schools, and most difficult to foster through policy. It is relatively easy to institute an instructional reform and/or change structural elements. However, nurturing close relationships through mandates is certainly tricky.

Schools usually are reflections of the communities in which they are located. And smaller communities are typically places that naturally result in close interpersonal connections, where individuals know, share with, and care for each other. Smaller schools mirror these qualities and reduce student alienation, teacher isolation, and rigid boundaries between the administration and the rest of the staff. We believe the resultant culture of small schools is qualitatively and intrinsically different from that of larger schools and that this closeness permeates all areas of schooling and makes a huge difference for children.

Processes that translate smallness to positive student outcomes. We surmise that the advantages of smaller schools are, at least in part, a result of smallness functioning as an enabler of other reform efforts. Many reforms, whether structural or instructional, appear to work best, and/or be implemented most effectively, when schools are small. For example, integrating curriculum is most successful when schedules are flexible and when teachers have ample opportunities to communicate and plan together. These conditions are simply more likely to occur and easier to implement in smaller settings.

In addition, we suspect that there is an interaction effect and that smallness actually amplifies the impact of many of these attributes. For example, we believe that small school size along with multiage classrooms is more effective than each element separately. We speculate that the advantages of multiage classes lo-

cated in small schools are greater than the sum of the separate parts.

These ten identified elements probably only scratch the surface of small school attributes that are associated with positive outcomes for kids. Emerging research, especially case studies of small schools, are beginning to uncover other features of small schools that are advantageous for students. For example, some researchers have documented a shared unrelenting focus on the school's academic mission as a small school characteristic (Howley & Howley, 2006; Wasley et al, 2000). For this reason, we consider this a fluid investigation, not an end result.

Implications for small schools. The ongoing battle to close smaller schools is unnecessary and irrational. Small schools are intrinsically disposed to offer educational and social advantages for children. To expend energy on closing these schools diverts energy and focus from strengthening them...and worse, wrenches community-centered schools from their communities and children from the schools that will have the most likelihood of meeting their needs.

> **The ongoing battle to close smaller schools is unnecessary and unwise. Small schools are intrinsically disposed to offer educational and social advantages for children.**

The efforts to consolidate small districts are likewise imprudent. Larger governance structures will not necessarily save money, or improve educational outcomes. Research suggests just the opposite.

Both of these struggles are ill advised. Any efforts to mandate consolidation should remain a local decision where citizens have the opportunity to decide how they want to educate their children.

There are other policies that are likewise unwise, both at the state and federal level. Policies that ignore the local context, and are miserly, punishing, and/or unduly restrictive may strip small schools of the resources and flexibility to take full advantage of their smallness. These policies include inadequate funding systems, rigid curriculum requirements, inflexible scheduling mandates, invalid use of test statistics to make judgments about school effectiveness, inappropriate sanctions, unreasonable facility requirements, and impractical mandates about teacher qualifications. Many of these policies force small schools to structure themselves and behave as if they were big schools and are, therefore, likely to fall short of the small school potential to help kids do their best.

Lastly, these ten effective attributes of smaller schools could and should direct reform efforts at all levels for both larger and smaller schools. Larger schools may be able to adopt some of these elements with some modifications. And these attributes can help guide strategies in smaller schools and smaller districts to make the most of the advantages of their small size and become better places to nurture children's schooling. This implies a major shift in policy focus. Rather than eradicating small schools, policymakers would be wise to invest in small schools and elements that make them effective and recognize that smallness is not a curse, but a blessing.

Endnotes

[1] The complexity of defining "small" is tackled by many school size researchers. See Cotton (2001) and Howley (2002a) for good discussions on this issue.

[2] A good example of small schools being forced to operate as if they were large occurs in Arkansas. Here all high schools are required to offer and teach 38 discrete courses each semester. This is simply impractical in small high schools with limited staff and small student enrollments.

[3] One study found only a negligible (but positive) association between participation and academic achievement (Coladarci & Cobb, 1996).

[4] We used student-teacher ratio as a proxy for class size, though we acknowledge its limitations. We also found that "cohort size" (number of students per grade level) was related to class size. That is, fewer students per grade level within schools were also associated with small class size. Cohort size was used here as another proxy for school size.

[5] Critics note that in California, class size reduction was implemented too quickly and was under-funded; they also noted that the lack of space and qualified teachers greatly hampered the law (Biddle & Berliner, 2002).

[6] Looping refers to the practice of assigning the same teacher to the same group of students over a number of years. For example, the same teacher may teach the same students in third grade and in fourth grade and, even, in fifth grade.

[7] Some of the research on teacher satisfaction as measured by attrition is inconclusive. For example, an extensive literature review by Guarino, Santibanez, Daley, & Brewer (2004) notes conflicting studies—some that indicate higher attrition in larger schools and other studies showing higher attrition in small schools. In spite of the inconsistencies, the authors conclude that most research points to higher teacher turnover in poorer, larger urban areas. Also, Ingersoll (2001) found that turnover was related to working conditions. He found that schools with fewer discipline problems, more teacher autonomy, and smaller classes are conducive to retaining teachers. To the extent that these are common characteristics of many small schools, they are attractive places to work.

[8] We used data from the School and Staffing Survey, Public School Questionnaire, 1999-2000, items 23 and 24.

[9] Using data from the Common Core of Data (CCD), 2003-2004

[10] CCD, 2003-2004

[11] Some studies of the relationship between school size and student achievement have used grade cohort as a proxy for school size to account for grade-span variation in school size data, for example Howley & Bickel (1999).

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