

Small School Districts and Economies of Scale

May 14, 2003

**Presented to the
State Board of Elementary and Secondary Education
at the May 2003
Strategic Planning Study Group Committee**

Louisiana Department of Education
Cecil J. Picard
State Superintendent of Education



Louisiana State Board of Elementary and Secondary Education

Mr. Paul Pastorek

President

Member-at-Large

Dr. James Stafford

Vice-President

Fifth District

Mr. Keith Johnson

Secretary-Treasurer

Second District

Ms. Donna Contois

First District

Ms. Glenny Lee Buquet

Third District

Mr. Walter Lee

Fourth District

Dr. Richard Musemeche

Sixth District

Mr. Dale Bayard

Seventh District

Ms. Linda Johnson

Eighth District

Mr. Gerald Dill

Member-at-Large

Ms. Leslie Jacobs

Member-at-Large

Ms. Weegie Peabody

Executive Director

For further information, contact

Laura Boudreaux Pitre

Division of Planning, Analysis, and Information Resources

Telephone: (225) 342-2843, e-mail: laura.boudreaux@la.gov

Toll free helpline: 1-877-453-2721

Website: www.louisianaschools.net

This public document was published at a total cost of \$285.00. Two hundred fifty (250) copies of this public document were published in the second printing at a cost of \$285.00. The total cost for the printing of this document, including reprints was \$306.00. This document was published by the Louisiana Department of Education, Office of Management and Finance; Division of Planning, Analysis and Information Resources; P.O. Box 94064; Baton Rouge, LA 70804-9064, under the authority of R.S. 17:22 to disseminate information and to provide technical assistance to local school boards and the public. This material was printed in accordance with the standards for printing by State Agencies established pursuant

Executive Summary

Introduction

- ❑ There is no universal agreement on the ideal size for schools or districts.
- ❑ 30 years of research shows that four factors consistently affect student achievement—smaller school size (300-500 students); smaller class size, especially at elementary schools; challenging curriculum; and more highly qualified teachers
- ❑ The states with the largest schools and school districts have the worst achievement, affective, and social outcomes.
- ❑ There was strong, consistent negative correlation between district size and student achievement in low-income populations.
- ❑ The higher the level of poverty in a community served by a school, the more damage larger schools and school districts inflict on student achievement.

The Notion of Economies of Scale: Advantages

- ❑ Expenditures per student generally rise, as district sizes fall below about 750 students and expenditures per student are relatively constant at enrollment levels above 1,000 students.
- ❑ Holding student performance constant, it is evidenced that school district consolidation substantially lowers operating costs.
- ❑ The larger a school district gets, the more resources it devotes to secondary or even non-essential activities.
- ❑ Instead of making up a larger percent of the budget as school district size increases, the percentage spent on teachers, books, and teaching materials decreases.

The Notion of Economies of Scale: Disadvantages

- ❑ Scale economies enjoyed by large districts can come at the expense of the efficient production of educational outcomes.
- ❑ Two inefficient districts combining do not necessarily merge into one efficient one.

Outcomes Of District Consolidation

- ❑ Local school officials should be wary of merging several smaller elementary schools at least if the goal of the merger is improved performance.
- ❑ After a school closure, out migration, population decline, and neighborhood deterioration are set in motion and support for public education diminishes.

Alternative Recommendations to District Consolidation

- ❑ Districts can share services such as personnel, programs, equipment, instructional materials, teachers, ancillary services, transportation, staff development, counseling services, special education, and vocational education.
- ❑ Implement or increase the use of regional service units to take over some of the services normally provided by districts to increase efficiency and economies of scale.
- ❑ Distance learning offers small school districts the ability to provide core and advanced courses that would otherwise not be available or not financially viable.

Summary

- ❑ There is no solid foundation for the belief that elimination of school districts will improve education, enhance cost-effectiveness, or promote great equality and except for extraordinary circumstances, district reorganization should be a voluntary decision of local voters and school boards.
- ❑ Size does not guarantee success, as “good schools come in all sizes.”
- ❑ Disputes on school mergers or consolidations may be costly diversions from the more important issues of disadvantage and equal opportunity, especially as they relate to school performance.

Small School Districts and Economies of Scale

As the decline in public school enrollment continues, an issue of concern is mounting regarding the size of school districts. Particularly, the subject of interest is **‘how small is too small?’** Louisiana has been experiencing a loss of student enrollment over the past 6 years. Since 1997, the average loss has been approximately 8,000 public school students per year. Some of our school districts have felt this loss much more than others, particularly our small, rural school districts. The five smallest school districts (Tensas, St. Helena, Red River, East Carroll, and Catahoula), which have experienced from 16% to 31% student loss over 6 years, are among the top ten districts in Louisiana with the highest percent of loss in student enrollment. It is evident that our smallest school districts are getting even smaller.

The focus of some of the concern in Louisiana is on school districts that are hovering around the enrollment of less than 1,000 students. These districts also have student achievement below what is acceptable, and have increasing difficulties to not only continue to financially provide their current services, but to also be in a position to update their services and provide the innovative services that will boost their student achievement. Questions and uncertainty abound regarding helping these students and these small school districts not only survive, but to continue to strive toward their academic potential. This interest of the fate of our small school districts has led to an examination of literature and research pertaining to small school districts, specifically focusing on the notion of “economies of scale” that refers to the potential cost savings on a per pupil basis with larger school districts, compared to smaller school districts.

This paper serves to provide a summary of the literature available on the topics of small school districts and the economies of scale; various national guidelines for defining a small school district; statistics related to small school districts (such as the prevalence and distribution of small school districts in the United States and the performance of students in these small school districts); issues faced by small school districts; methods and outcomes of consolidation/reorganization of small school districts; and alternative recommendations to the consolidation/reorganization of small school districts.

An Historical Look at School and District Size

Research on the role of school and district size as an influence on school performance has a long history and an abundance of literature available. This widely studied issue has generated conflicting results. However, there are some consistent emerging themes, which are presented in this paper.

Historically, schools and school districts are getting bigger. Between 1940 and 1990, the total number of elementary and secondary schools declined 69 percent, despite a 70 percent increase in the population (Walberg; Ehrich; as cited in Lawrence et al., 2002) and the total number of school districts decreased 87 percent (Cotton, 1996; Bailey,

2000). The period between 1939 and 1973 represents the period of greatest decline; school districts consolidated at a rate of 13 percent per year (Killeen & Sipple, 2000). The great decline was fueled by the notion that “bigger is better.” By 1975, this pattern had leveled out to a consolidation rate of less than one-half percent. In the past decade, there are signs that people are beginning to recognize the problems inherent in big schools and districts, and the surge to create larger schools and districts has slowed somewhat. It is noted by researcher Tom Gregory from Indiana University (2000) that “it has been over 30 years since the last study recommended large schools; nevertheless, districts have continued to build them.”

The trends of school district consolidation appear to have an inverse relationship with student enrollment trends; as the rate of student enrollment climbs, school districts consolidate. The history of consolidation of schools and districts has dramatically increased the enrollments in most schools and districts. In 1930, the average school size was 81 students. In 2001, the average school size was approximately 521 students. In 1940, the average school district enrollment size was 217 students, compared with an average of approximately 2,788 students in 2001. Consolidation clearly forced an increase in the size and capacity of schools and school districts. School district size is the most significant factor in determining school size, with consolidation/reorganization plans generally resulting in larger schools (Williams, 1990).

In 2001, 49.2% of the school districts in the United States had enrollments of less than 1,000 students; 45.1% of the school districts had between 1,000 and 10,000 students; and 5.7% of the school districts had more than 10,000 students. It is interesting to note that even though only 5.7% of the school districts have more than 10,000 students, these districts enroll 51% of the students in the United States (NCES, 2002). The average number of districts per state is 332. According to NCES statistics, Texas has the most school districts with 1,219, and an average student enrollment per district of 3,330 students. Other states with large numbers of school districts are California (1,055 school districts), Illinois (1,055), Ohio (805), and New York (796). Louisiana is ranked 40th in the total number of school districts (with 1 being the state with the largest number of districts) with 86 districts (NCES includes Louisiana’s Type II charter schools, the State Board of Elementary and Secondary Education schools, and laboratory schools as separate local education agencies; thus, individual school districts). The states with the least number of school districts are Hawaii, with only 1 district whose enrollment is 184,360; Nevada (18 school districts); Maryland (24); Delaware (27); and Washington, D.C. (34).

The states with the largest average district enrollment are Hawaii (with an average district enrollment of 184,360), Maryland (35,538), Florida (33,354), Nevada (18,928), and Utah (10,471). Louisiana has the 6th largest average school district enrollment, with an average district enrollment of 8,641 students. The states with the smallest average school district enrollments are Montana (with an average school district enrollment of 291 students), Vermont (292), North Dakota (403), Nebraska (414), and Maine (637).

As stated earlier, the average school enrollment in the United States is 521 students. Florida (with an average school enrollment of 754), Georgia (743), Hawaii (706), California (701), and Nevada (681) are among the states with the largest average school enrollment. Louisiana is ranked 23rd largest in average school enrollment, with an average of 493 students per school. The states with the smallest average school enrollment are South Dakota (with an average of 170 students enrolled per school), Montana (176), North Dakota (203), Nebraska (221), and Wyoming (232).

Various National Guidelines for Defining a “Small School” and a “Small School District”

In the abundance of literature and research that has been devoted to school and school district size, it still remains that there is **no universal agreement on the ideal size for schools or districts**. The majority of the literature has focused on school size, as there is the belief that school size dictates district size. Some of the research indicates that small schools are defined as having an enrollment of less than 500 students, medium schools having 500-1,000 students, and large schools having more than 1,000 students (Williams, 1990). Other research indicates that schools with enrollments in excess of 1,200 students are in the large category. Craig Howley (2000), in an issue of the *Rural Education Digest*, indicates that high schools should never enroll more than 600-1,000 students. Lawrence et al., (2002) report that elementary schools are on average half the size of high schools. Additionally, Lawrence et al. report that there are upper limits of small size, and based on the grade configuration, the following limits are suggested:

- High school (grades 9-12)—75 students per grade, 300 total
- Middle schools (grades 5-8)—50 students per grade, 200 total
- Elementary schools (grades 1-8)—25 students per grade, 200 total
- Elementary schools (grades 1-6)—25 students per grade, 150 total

As the literature cited above indicates, the optimal or recommended size of schools varies widely in the literature. On average, the research indicates that an effective size for a small elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school (Williams, 1990; Cotton, 1996).

In terms of school district size, the research is more sparse compared to the literature regarding school size, but again there is **no universal consensus on what constitutes a large school district or a small school district**. Florence Webb, in a 1971 Education Research Service study of 26 reports completed between 1939 and 1969, stated that the most common recommendation for district size was 10,000 students (as cited in Cox, 2002). More recent research, however, after the surge for district consolidation slowed considerably, indicates that 4,000-5,000 students in a school district is a reasonable threshold (Lawrence et al., 2002). In another study, it is suggested that the optimal district enrollment is approximately 6,000 students (Duncombe and Yinger, 2000). Augenblick and Myers (2001) reported that researchers and practitioners believe to offer an appropriate curriculum, extra-curricular activities, and a safe and nurturing environment, a school district should enroll at least 260 but no more than 2,925 students. In an economy of scale study conducted by Imerman and Otto (2003) using Iowa’s schools and

districts, they propose that school districts should not fall below 750 enrolled students, while a study conducted by Cox (2002), using Utah's school districts, indicates that school districts should enroll at least 1,000 students. Arkansas' Governor Mike Huckabee has proposed to merge or consolidate any school district with fewer than 1,500 students, which would eliminate 233 of Arkansas' 310 school districts. And still another study on the consolidation of New York State's school districts offers to consolidate districts with fewer than 500 students (Duncombe, Miner, and Ruggiero, 1994).

Performance of Students Relative to School and District Size

As evidenced by the conflicting literature cited here, there is no agreement as to the optimal size of school districts. However, what is evidenced by the literature is that **small school districts and small schools have many advantages over larger school districts and schools**. This fact is widely reported in the literature pertaining to the student achievement differences among the varying district sizes.

The research that has been conducted in the past decade has had a focus on the relationship between the size of a school or district and student achievement. Much research has also been conducted on the impact of poverty in relation to the size of schools and districts. Kathleen Cotton (1996) observes, **'the states with the largest schools and school districts have the worst achievement, affective, and social outcomes.'** Florence Webb, in a 1971 Education Research Service study of 26 reports completed between 1939 and 1969, found **"there was strong, consistent negative correlation between district size and student achievement in low income populations"** (as cited in Cox, 2002). Walberg (as cited in Lawrence et al., 2002) found a direct, negative relationship of the states with large district size and test results. **As a district's size increases, the student achievement decreases**. Darling-Hammond (1998) concludes that **30 years of research shows that four factors consistently affect student achievement—smaller school size (300-500 students); smaller class size, especially at elementary schools; challenging curriculum; and more highly qualified teachers**.

There has been mounting evidence that district size has an effect on student achievement in the literature and research. One study, however, emphasizes that a direct influence cannot be conclusively determined, and instead the influence should be found to be indirect. Howley, in an article published in the *Rural Education Digest* (2000), states that "Recent literature relating district size to school performance rests almost entirely on an indirect relationship in which socioeconomic status (or poverty) and size work *jointly* to influence school performance," so that the interaction of poverty and district size exerts an important influence on school performance. Nevertheless, there are many studies that conclude that school or district size has a direct impact on school performance.

Research conducted by Howley and Bickel (2000), using four widely divergent states (Georgia, Ohio, Texas, and Montana), found that smaller schools reduce the harmful effects of poverty on student achievement. Specifically, they state, **"smaller schools help students from less affluent communities narrow the academic achievement gap between them and students from wealthier communities."** Additionally, they report

that the lower the income of the community served by the schools, the more student achievement is benefited by smaller schools and the more achievement sags in larger schools and surges in smaller schools. These researchers also point out that controlling for race, these results were not significantly altered, but in fact are strengthened in some cases. They conclude that as schools become larger, the negative effect of poverty on student achievement increases. Howley and Bickel further state, **“The well-documented correlation between poverty and low achievement is much stronger-as much as ten times stronger-in the larger schools than in smaller ones in all four states [studied].”** Many of the smaller schools serve lower income rural communities, and while not all of these schools are “good” schools, the smallness of these schools is an asset to student achievement. They propose that consolidation would likely produce lower achievement scores in the less affluent communities. In their series of investigations of five states (the four aforementioned states plus their previous research on West Virginia), Howley and Bickel (2000) found two clear principles: (1) **in impoverished communities, small schools in small districts boost school performance** and (2) **in every comparison made in the five studies, smaller districts and smaller schools demonstrated greater achievement equity**. In their study of Georgia, Bickel and Howley (2000) report that larger schools in larger districts seem to propagate inequality of outcomes by comparison to smaller schools and smaller districts.

Karen Imsher (1997) cites research that finds higher grades and test scores, and improved attendance and lower dropout rates in smaller schools. Imsher also writes that large school size hurts attendance and dampens enthusiasm for involvement in school activities. She states that “large schools have lower grade averages and standardized-test scores coupled with higher dropout rates and more problems with violence, security and drug abuse.” Stockard and Mayberry (as cited in Cox, 2002) report that behavior problems are so much greater in larger schools that any possible virtue of larger size is canceled out by the difficulties of maintaining an orderly learning environment.” Robert Jewell (as cited in Cox, 2002) states, “Students in states with smaller districts and smaller schools have higher SAT and ACT scores.”

As stated earlier, the governor of Arkansas has proposed to consolidate 233 of their 310 school districts. This is partly a result of the November 2002 Arkansas Supreme Court decision to uphold the ruling of the lower court that found Arkansas’ school finance system was neither adequate to meet pupils’ needs nor fair in the way the funds were distributed. Arkansas has until January 2004 to make changes. Although consolidation was not demanded, raising taxes did not seem viable; therefore, consolidation was the first option on the table for Arkansas. Arkansas’ legal difficulties and their proposed solution have led to a surge of focused literature and research studies regarding school district consolidation.

In a *Rural Policy Matter Newsletter* published online in March 2003, it was indicated that among the top 25% of all districts in Arkansas, only 15 of the 78 have over 1,500 students. When examining Arkansas’ American College Test (ACT) scores in relation to achievement on the ACT, this newsletter reports that students in smaller districts in Arkansas outperformed those from larger districts on the ACT Literature test (38.5%

Proficient vs. 37.4%) and that fewer students from the smaller districts scored below Basic on Math and English Language Arts on the ACT.

Researchers from Ohio State University published an article on how poverty and the size of schools and school districts affect school performance in Arkansas (Johnson, Howley, and Howley, 2002). They found that children from lower income communities perform better in smaller schools and smaller districts. They indicate that the **higher the level of poverty in a community served by a school, the more damage larger schools and school districts inflict on student achievement**. In more affluent communities, the impact of school and district size is quite small, but the poorer the community, the stronger the influence. Reported by the authors of this study is that the achievement gap between children from more affluent and those from less affluent communities is narrowed in smaller schools and smaller districts, and widened in larger schools and larger districts. They conclude that smaller schools are most effective against poverty when they are located in smaller districts; they are less effective when they are located in larger districts. **Poverty dampens student achievement most in larger schools in larger districts**. They report that the **relationship between school size, poverty, and student achievement is as much as three times greater in schools with the largest percentage of African-American students**. The authors conclude that consolidating or merging districts serving students from the poorest 50% of Arkansas communities (free and/or reduced lunch rate of 48% or more) would likely lower student performance below current levels on state-mandated tests. Johnson, Howley, and Howley (2002) further express that “consolidating smaller districts is predicted to lower school performance in the poorest half of Arkansas’ communities, even if smaller schools are maintained in those newly consolidated districts.” Also, while not all of the small schools studied are “good” schools, the smallness of a school is an asset to student achievement; consolidating to larger schools would likely produce lower achievement scores in the less affluent communities.

Additionally, LeFevre and Hederman, in their *Report Card on American Education* (as cited in Lawrence et al., 2001), noted that **higher outcomes on standardized tests, such as the Stanford Achievement Test (SAT) and ACT, as well as higher rates of graduation, may be connected more with school size than with race**.

While the research cited above by Ohio State University and the Rural Education Trust Organization indicates that smaller schools in smaller school districts can be effective in dampening the effect of poverty on student achievement, there are studies that have suggested other explanations for the results.

Research by Roeder (2002) using Kentucky schools, states that smaller school size does not reduce the negative effects of poverty on performance. Instead, poverty remains a substantial determinant of performance, and poverty has a substantial negative impact on school performance. The results of this research suggest that **merging smaller schools with large proportions of disadvantaged students into larger schools with large proportions of disadvantaged students is not likely to improve student performance**. The emerging result of his research is that school size does not moderate the effects of

poverty on performance. Instead he offers that school type has a significant direct impact on performance and that school type is the variable that moderates the effects of poverty on student performance. Roeder finds that elementary schools, which tend to be smaller in enrollment than other school types such as high schools, explains the variance of school performance more completely than school size. Roeder concludes his research by stating that his analysis suggests that remedies for poor school performance should concentrate more on reducing the harmful effects of poverty on achievement rather than simply creating smaller or larger schools.

David Cox (2002), in an article written using Utah's school system, found that on the surface, Utah school districts' Stanford Achievement Test (SAT) scores are nearly identical no matter what size the school. However, he found that since most small districts are poorer than large districts, there are differences in the results when socioeconomic conditions are considered. He compared the districts in Utah based on their expected range, which refers to the expected test score range based on the socioeconomic makeup of the student population; specifically, he found the higher the level of poverty among students, the lower the expected scores. When looking at district size, he found that smaller districts seem to perform consistently better within their expected ranges, with 99% of the actual scores falling in the expected range while the largest districts scored lowest, with only 36% of the actual scores falling into the expected range. These results indicate that poverty has less of an effect on student achievement in smaller districts compared to the larger districts.

Kathleen Cotton concludes "that since half the research studies on student achievement find no differences between large and small schools, and the other half find superior achievement in small schools; we may safely say that student achievement in small schools is at least equal and often superior to student achievement in large schools" (as cited in Roeder, 2002).

Issues Faced by Small School Districts: Advantages

Other than student achievement, the review of the literature and research also indicates other advantages to small schools and districts. Williams (1990) writes in his working paper on the dimensions of education about recent research on school size that some advantages to small districts are local control, possible close relations among professionals, parents, students and community, and the opportunity for many students to participate in school activities. Howley and Bickel (2000), after completing research using four widely-diverse states, suggest that **states concerned about reinvesting in deteriorating school facilities should not be eager to increase school size in most instances, if higher student achievement, especially in poorer communities, is a goal.** Kathleen Cotton (1996) in her extensive review of the literature reports "the research linking school size to social behavior has investigated everything from truancy and classroom disruption to vandalism, aggressive behavior, theft, substance abuse, and gang participations. This research shows that small schools have lower incidences of negative social behavior, however measured, than do large schools." In an article published by *Education Week* (2001), Debra Viadero reports that studies conducted over the past 10 to

15 years suggest that in smaller schools, students come to class more often, drop out less, earn better grades, participate more often in extra-curricular activities, feel safer, and show fewer behavior problems. Other attributes to small schools noted in the literature are a greater sense of belongingness to the school by students, student's personal and academic self-regard are more positive, there is more one-on-one attention from teachers, and teachers and administrators have positive attitudes toward their work.

Issues Faced by Small School Districts: Disadvantages

Along with the many positives of small schools and districts, there are disadvantages noted in the literature. Schwartzbeck (2003), in her report on declining school enrollment, notes that "small school districts are more likely to have a building with a feature in less than adequate condition and that lower budgets and decreased access to quality teachers often means fewer educational resources and fewer specialized courses and services." Williams (1990) covers an array of advantages of large school district stating "larger districts have more total resources, curricula can be standardized, administrators may command larger salaries and larger professional staffs, teachers may receive better pay and improved fringe benefits, and members of large school boards may exercise a greater power base in matters of educational policy and financial management." This sentiment is echoed by Galles and Sexton (1995), who state "teachers and administrators have used the bargaining advantages of larger districts to extract better terms from school boards, but the geographically restricted competition allows them to capture those gains for themselves rather than passing them on to their "customers" in higher quality education." Camp (as cited in Williams, 1990) reports that the "lack of tax base means that rural school districts [used synonymously in this research with small school districts] operate with a disproportionate percentage of their operating budget going to salaries and administration with little left over for innovative programs, expanded course offerings, continuing education, administrative assistance or high tech educational resources. And a number of competing private schools that drain valuable community support and human resources from the rural public school systems." One research article further concludes that small district size has greater adverse effects on students who are in some sense unusual, such as handicapped and gifted students (Monk, as cited in Williams, 1990).

Reasons Why School Districts Consolidate

District consolidation has been going on for the past 60 years. A variety of reasons for school district consolidation has been cited in the research. Reasons such as reduction of administrative staff, fuller utilization of facilities and teachers, and the potential to offer a wider range of programs in all areas of instruction at lower costs have been used to justify school district consolidation. However, the most frequent motivator found as to why states consolidate school districts is based on financial aspects, specifically the notion of "economies of scale." This term is borrowed from the business world so it should use a business-like method of measuring results. Lawrence et al. (2002) offer that one should think of economies of scale as the costs of *producing* (educating) a *product* (students) that meets certain *quality controls* (graduation requirements) to measure its costs and rate of success in the marketplace. Stated more simply by Duncombe, Miner, & Ruggiero

(1994) is that the economy of scale is the relationship between average cost (cost per unit of output) and the level of output. Augenblick and Myers (2001) state that economy of scale is measured by the pupil performance and per pupil spending factors. There is also the term of “economies of size,” which imply that per pupil costs can be reduced by expanding the student population; in other words, consolidation may reduce per pupil costs (Duncombe et al., 1994). Research indicates that saving money is often advanced as the primary reason for increasing school and district size, and that left with the choice of consolidation or of allocating additional funds to rural areas, it is not unusual for states to address the problem through district consolidation policies. However, it is interesting to note that researchers indicate that the impetus to consolidate rural or small schools almost always comes from outside the rural community.

The Notion of Economies of Scale: Advantages

There are several studies that have analyzed this notion of economies of scale in education. Some authors conclude that for certain sized schools and districts, there is evidence of economies of scale. Imerman and Otto (2003), in their investigation of school district expenditures with respect to school district size in Iowa, report “expenditures per student generally rise as district sizes fall below about 750 students and expenditures per student are relatively constant at enrollment levels above 1,000 students.” Similarly, Cox (2002) reports that when examining Utah’s administrative cost per student, it showed little difference between large and small districts unless the enrollment dropped below 1,000 students; below 1,000 students, the administrative costs rise. The results of New York’s school consolidation analysis indicate potentially sizeable cost savings from consolidation of districts with fewer than 500 pupils; however, the researchers found relatively few districts in New York were strong candidates for full consolidation, but many may benefit from sharing of administrative and support functions (Duncombe et al., 1994).

These researchers, Duncombe and Yinger (2000), again investigated New York’s extensive consolidation efforts spanning from 1985 to 1997, to see if school district consolidation cut costs. They state that central administration has to exist whether the district has 100 or 5,000 students, and this central administration may be able to serve a significant range of enrollments; therefore, increasing student enrollment by consolidation will result in an output at a lower average cost. These authors note that, holding student performance constant, they find evidence that school district consolidation (using New York State school districts) substantially lowers operating costs. Also reported is that larger districts have the benefit of negotiating bulk purchases of supplies and equipment or by using their monopsony power to impose lower wages on their employees to lower their operating costs. Williams (1990) echoes this sentiment, reporting that larger districts can gain economies of scale in busing and purchasing power and can attract more grant money. Also noted is that larger plants (schools) may be able to produce output at a lower average cost; such output noted is equipment the plant uses, like the heating system, the communication system, and specialized facilities, such as science or computer labs (Duncombe & Yinger, 2000).

In the case of Arkansas' consolidation efforts, the idea that more efficiency could be gained by consolidating schools rests on the notion that their administrative costs were high and would be lowered with consolidation. It was found that, at the school building level (principal's office) on a per pupil level, these smaller districts actually spend \$12.37 per year less on school level administration than larger districts (\$299.36 vs. \$311.73); at central administration (superintendent's office), smaller districts spend more (\$270.65 vs. \$139.74); and overall on all forms of administration, smaller districts spend \$118.54 more than larger districts. It was reported that Arkansas would save \$16.7 million or roughly 1% of state's current spending, by consolidating (*Rural Policy Matters Newsletter*, 2003; Johnson, Howley, & Howley, 2002). These reports also indicate that for Arkansas to save on teacher salaries, the districts would have to accept larger class sizes, and the savings would depend on teachers accepting the salaries of small district teachers.

The Notion of Economies of Scale: Disadvantages

While there is research and literature that supports the notion of economies of scale, there is also an abundance of literature that discredits this notion. Even though the researchers quoted above (Duncombe and Yinger, 2000) find that economies of scale in consolidating small school districts exist, they also express that **'despite widespread consolidations of school districts in the United States, there exists little direct evidence on how consolidation actually affects school districts in the medium or long run.'** Williams (1990) discussed the term of "diseconomies of scale," which he defines as the act of ignoring the additional capital expenditures, salaries, and operating costs associated with greatly increased transportation required by consolidation. Diseconomies of scale refer to the new and enlarged costs attributable to increased size of operations. Webb and Ohm (as cited in Cox, 2002) found **smaller districts are "more efficient than larger ones in both dollars per student and numbers of administrators per student."** Antonucci (as cited in Cox, 2002) found that there are "penalties of scale;" instead of making up a larger percent of the budget as school district size increases, the percentage spent on teachers, books, and teaching materials decreases. He writes, **'Paradoxically, the larger a school district gets, the more resources it devotes to secondary or even non-essential activities.'** In 2000, the Utah legislative audit on class size reduction monies found that smaller districts were better able to account for specific funding than larger districts because the larger district's budgets were so complicated (Cox, 2002). Butler and Monk (as cited in Williams, 1990) report that **scale economies enjoyed by large districts can come at the expense of the efficient production of educational outcomes**, and there is a possible loss of efficiency associated with efforts to increase size by closing schools and consolidating schools districts. Additional research indicates that the bureaucratic red tape and inefficiencies can wipe out monetary savings and that **two inefficient districts combining do not necessarily combine into one efficient one**. It should be expected that local control will be lost and there may be domination of an entire district by a more populous or politically powerful portion of it. Transportation problems may also arise.

Opponents to the economies of scale cost reduction notion express that while it may be true that in small schools some costs increase because they are spread out over fewer students, it must be considered that the research suggests larger schools require added tiers of administration, more security people, and additional maintenance and operations personnel, which may counteract the potential financial savings (Lawrence et al., 2002). The increased cost of salaries, workspace, and other operational expenses are reported to offset expected savings from consolidation. Transportation figured by cost per student for rural students is more than twice as expensive as transporting urban students and nearly 50% more costly than busing students in suburban districts (Lawrence et. al., 2002; Killeen & Sipple, 2000; Beaumont & Pianca, 2000). Large schools can be more expensive than smaller schools because of the hidden costs, such as expenses for increased transportation, higher administration overhead, expenditures for maintenance, and security.

It is important to note, **“despite a substantial literature on economies of scale in education, there is little consistent evidence on whether school district consolidation saves money, while maintaining educational quality”** (Duncombe, Miner, & Ruggiero, 1994). Cotton (1996) states that many school consolidation efforts have been based on the beliefs that larger schools are less expensive to operate and have higher-quality curricula than small schools; however, she offers that research has demonstrated neither of these assertions is necessarily true. Other researchers conclude that **“Accumulated evidence points to the clear conclusion that, except for consolidations of very small districts, there are no economies of scale to local education”** (Niskanen; Walberg & Fowler; as cited in Galles & Sexton, 1995). Killeen and Sipple (2000) in a national study conclude that despite school consolidation, school districts do not seem to benefit much from economies of scale in terms of transportation and, in fact, transportation costs have increased.

Lawrence et al. (2002), in their research about the cost effectiveness of small schools, concede that schools with fewer than 600 students spent \$7,628 per student annually; which is \$1,410 more than larger schools. However, they offer an alternative view of cost effectiveness, stating that the “so-called inefficiencies of small schools are greatly reduced when calculated on the basis of *cost per graduate* and virtually disappear when the substantial social costs of non-graduates and the societal impact of college-educated citizens are considered” (Funk & Bailey, as cited in Lawrence et al., 2002). It is noted that the total cost per graduate for small schools (fewer than 600 students) was \$49,553, which is \$25 less per graduate, compared to larger schools. This research further explains that this difference in graduate cost is attributed to the dropout rates and that 64% of small school students graduated in four years, compared with 51-56% of large school students. Schools with fewer than 600 students had a 5% dropout rate, compared to schools with more than 2,000 students, which had a 13% dropout rate.

Taking the approach of looking at the broader scope of things and not just focusing on the economic aspects, Lawrence et al. (2002) report that there are several other **subtle costs that discredit the economies of scale cost savings ideals**. These other costs of larger schools and districts are **lower graduation rates, higher dropout rates, high rates of**

violence and vandalism, higher absenteeism, and lower teacher satisfaction. The costs to society are higher crime rates, increased cost of incarceration, more violence in schools, and more families receiving public assistance. These authors also report that **it takes more paid professionals per student to deal with the negative effects of alienation in a large school than in a small one**, where people know each other better. Walberg and Fowler (1986) report that “it appears that **the smaller the district, the higher the achievement when the socioeconomic status and per-student expenditures are taken into account** because the superintendent and central staff awareness of citizen and parent preferences, the absence of bureaucratic layers and administrative complexity, teacher involvement in decision making, and close home-school relations, these may account for the efficiency of small districts.” Overall, the research indicates that **school district consolidation and reorganization should not be founded on only opportunities to reduce costs.**

Outcomes Of District Consolidation

Mostly, the advantages that have been noted for district consolidation have been economical. But a look at some of the other outcomes of district consolidation may have an impact on the future decisions of states contemplating district consolidation.

In terms of the effects on students, several studies claim district consolidation will improve school performance are not supported (Bickel and Howley, 2000; Kennedy; Adams; as cited in Howley, 2000). Results of the University of Kentucky study indicate that local school officials should be wary of merging several smaller elementary schools, at least if the goal of the merger is improved performance. Controlling for several important school characteristics, Roeder (2002) found that size has no significant effect on 3 or 4 measures of elementary school performance and that higher performance is more a result of lower rates of poverty rather than school size. The data also indicate that district consolidation results in longer bus rides for students. Districts generally need to consolidate students into larger schools, and assuming consolidating districts are sparsely populated, consolidation is likely to result in longer commuting times. While the author notes that the data are inconclusive, it is reported that students with long bus rides suffer from sleep deprivation, lower grades, poorer levels of fitness, loss in the choice of after-school activities (Schwartzbeck, 2003).

In terms of the effects on the community, consolidating two small schools can result in fewer opportunities, such as fewer jobs for teachers who are members of each community, fewer places on sports teams, fewer positions in the band, fewer chances for parents to join with neighbors in the local PTA (Ehrenhalt, 2003). **After a school closure, out migration, population decline, and neighborhood deterioration are set in motion and support for public education diminishes** (Rincones, 1988).

In terms of staffing, there is a labor relations scale effect caused by seniority hiring within certification areas and by change in comparison groups for collective negotiations. This issue could be a major source of diseconomies of scale, due to the leveling upward of wages to those of the most generous district when two school districts consolidate

(Tholkes, as cited in Duncombe & Yinger, 2000). They also note that stronger unions may prevent staff layoffs, which eliminates one of the major sources of cost savings associated with consolidation. Other effects that are more difficult to measure but have substantial impacts on the success of districts and the consolidation efforts are a lower level of staff motivation and effort, lower student motivation and effort, and lower parental involvement. These effects are attributed to less of a sense of belonging and loss of control that were associated with smaller schools and districts.

Alternative Recommendations to District Consolidation

There is a bevy of information related to the effects of, the costs of, and the benefits of school and district consolidation. There is also a multitude of alternative recommendations available to states that are considering consolidation of schools and districts. Schwartzbeck (2003), in a study that looked at declining school enrollment, reports that a small school district in Edgemont, South Dakota implemented several systematic changes in the hopes of preventing school district consolidation. Some of their changes were to combine their middle and high schools, to cut their gifted student program, to change their guidance counselor and their superintendent/chief executive positions from full-time to part-time, to recruit volunteers, and to implement a four-day workweek by cutting out Fridays. Schwartzbeck notes that the four-day workweek is in use in about 100 rural school districts nationwide and these districts have found that this alternative to consolidation has been effective in cutting transportation costs but not personnel costs. Another alternative is the year-round schedule, which has a demonstrated linkage with improved academic performance, improved student discipline, and increased student attendance. This alternative also provides a better chance for more and better education to those in the greatest need, the poorer students, and brings a broadened and enriched curriculum. (Heaberline, as cited in *Arkansas Blue Ribbon Commission on Public Education*, 2002; Elliot, 2002).

In Kansas, cooperative agreements with nearby districts were reached so that two districts share specialized teachers (music, media, foreign language), have combined sports teams, and share administrators in efforts to cut costs, while still remaining separate school districts. Lawrence et al. (2002) report that partnership and shared use of facilities (private and public facilities) can allow small districts to offer specialized programs for students. They suggest that leasing space in under-used school facilities, including weekend and vacation time, to public and private organizations is another way of sharing expenses between two small school districts. Schwartzbeck (2003) also notes that some states have implemented or increased the use of regional service units to take over some of the services normally provided by districts to increase efficiency and economies of scale, such as cooperative purchasing agreements, shared staff development programs, and management support services, such as payroll(s). Kansas, Oklahoma, Colorado, and Arkansas have also turned to distance learning and technology by using interactive television distance learning consortiums as alternatives to district consolidation (Schwartzbeck, 2003; *Arkansas Blue Ribbon Commission on Public Education*, 2002). Distance learning offers these small school districts the ability to provide core and advanced courses that would otherwise not be available or not financially viable.

Rincones (1988), in his paper that explored alternatives to district consolidation, offers that shared services such as personnel, programs, equipment, instructional materials, teachers, ancillary services, transportation, staff development, counseling services, special education, and vocational education allows school districts to remain separate, while gaining additional curricular programs of higher quality. Additionally, this sharing lets the community keep its own high schools, and, consequently, its identity and vitality.

All of these alternatives build on strengths of smaller district size and allow states to retain existing smaller schools and districts. The advantages of some of these alternatives are that a balanced faculty is maintained, academic expertise increases, and expenditures decreased through joint purchasing. Research indicates that remedies for poor school performance should concentrate more on reducing the harmful effects of poverty on achievement, rather than simply creating smaller or larger schools (Roeder, 2002).

The alternatives discussed above are available options that do not rely on the reconfiguration of schools and districts, but are more focused on sharing or contracting services in efforts to reduce costs, while bringing needed services to the students. Midway between district consolidation and these service alternatives are ideas of partial school reorganization. This concept includes the notions of central high school districts, cluster districts, and the exchange of students for tuition. The central high school districts are those in which two or more school districts combine their high school programs and retain separate elementary programs. The advantages of this approach are directed toward the most problematic level of school, the high school. This alternative allows parents to continue to control elementary education, and it provides that only older students are bused.

The sharing of services discussed in the previous paragraphs is similar to the notion of a "cluster district," in which the districts share and provision their services by separate neighboring school districts. The difference is that a cluster district is an alternative that is usually initiated by local school boards and is usually more complicated, being on a larger scale, than just sharing one or two services with another district. Some examples of this sharing of services are that districts can select a superintendent who spends some time in one district and some in another, students from one district can be sent to another temporarily for specific activities, and clusters have been formed around science programs and materials, microcomputers, staff development, and in-service for administrators.

The exchange of students for tuition is another alternative practice to district consolidation. High school students are exchanged to neighboring school districts or even across state lines. This practice can be facilitated through state intervention, by tying the tuition a receiving district charges to the difference between its costs and increased level of state aid the higher enrollment generates. The advantages of this alternative are that small districts avoid the cost of operating their own high schools and, depending on wealth of their neighboring community, the tuition cost can be relatively modest.

Summary

Several state studies have been referenced throughout this document. Some of the overall findings of these researches are important to note. The Arkansas study found, financially, there is simply not that much to be gained by district consolidation; this was after weighing the potential costs of district consolidation against the possible negative effects on student achievement. In the North Carolina Department of Public Instruction evaluation of a plan for school district consolidation, Sher and Schaller (1986) reported **“there is no solid foundation for the belief that elimination of school districts will improve education, enhance cost-effectiveness, or promote great equality and except for extraordinary circumstances, district reorganization should be a voluntary decision of local voters and school boards. Issues like mergers usually are a diversion from the greater tasks of finding new ways to positively influence children’s lives and increase teacher effectiveness.”** The former U.S. Secretary of Education and the governors of Georgia and North Carolina have spoken in favor of small schools. The Secretary of Education praised the resistance of rural communities that have fought fiercely for decades to preserve their small schools in the face of consolidation (Riley, as cited in Bickel and Howley, 2000). Additional support for small schools comes from the Bill & Melinda Gates Foundation’s Nation School District and Network Grants Program that has committed \$350 million to a variety of organizations across the country to support school reform. Specifically, this program supports “the start-up of new small high schools of no more than 400 students, and the conversion of large high schools into smaller, more personalized schools or learning communities” (The Bill & Melinda Gates Foundation, 2003). This program’s initiative has the particular focus on underserved communities, with the goal of creating a more equitable system of learning opportunities for all students by creating smaller learning communities.

Although there is mounting research and increasing failures of the educational system are becoming well documented and advocated, there are systems and researchers who still advocate for more centralized public school systems. New York State has actively encouraged consolidation of small school districts; however, it is noted that New York State is willing to give generous additional state aid to districts willing to consolidate. New York backs its commitment to consolidation with a sizeable long-term subsidy to consolidating districts. The results of the research on the potential savings, in regard to New York school district consolidation, indicate that “small districts do confront sizeable cost impacts due to scale inefficiencies,” and **state governments**, when considering consolidation, **should first consider “adjusting the distribution of state aid to allow for the higher cost imposed by small district size,”** (Duncombe, Miner, & Ruggiero, 1994). The Minnesota legislature has passed several laws to encourage district consolidation, and they have made available construction funds to districts that have agreed to consolidate. Additionally, districts can receive up to \$600 per pupil over a four-year period from state grants and local levies for their consolidation efforts. It is interesting to note that in the past decade, realizing the sensitivity of the subject of district consolidation, most states have decided to live with the systems they have.

Conclusions

Despite the extensive literature and research review completed to compile this paper, **there are no clear-cut guidelines in respect to the economies of scale in relation to district size, or definitions for optimum district size, or even suggestions for when to consolidate or when not to consolidate.** There are pros and cons on both sides of the coin. The one emerging theme, in the literature and research, is that approximately 60 years ago, the idea that “bigger is better” in the school system was born, and massive school and district consolidation practices ensued. Over the last 10 years, however, this theme now has an opposing view: small schools and small school districts can be cost effective, can offer students a comparable education experience as larger ones, and in some aspects, can offer benefits and advantages over their larger counterparts. It is of particular note that in the literature, this emerging view of the benefits of “smallness” is often coupled with alternative options “outside the box” of thinking in the general public school education management system. These alternatives are usually much less costly, in economic, student achievement, and community survival terms, when compared to the costs of school and district consolidation. Another emerging theme is if school or district consolidation is the method chosen to deal with small schools and districts, then the state must take an active roll in ensuring the success of the consolidating districts by offering to assist with the financial costs initially incurred upon consolidation.

In summary, it should be emphasized that disputes on school mergers or consolidations may be costly diversions from the **more important issues of disadvantage and equal opportunity, especially as they relate to school performance.** School district consolidation and reorganization **should not be founded only on opportunities to reduce costs,** and the **financial savings should never be the sole reason to consolidate school districts. Size does not guarantee success,** as “good schools come in all sizes.” **There is little or no agreement on optimal school size;** “one size does not fit all.” States should carefully consider a multitude of options for schools and districts struggling because of their size. The impact on student achievement and the community well-being should be extensively examined, as many researchers have insinuated **combining two small failing districts will only result in one larger failing district unless the proper measures are taken into account.** Cox (2002) summarizes, “Smaller districts and schools bring the problems and opportunities back to the local level. This freedom will spur innovation, flexibility, and commitment by both parents and teachers. Only then will true accountability, educational quality, and efficiency be within our reach.”

REFERENCES

Arkansas Blue Ribbon Commission on Public Education. (2002, March 28). *Initial Key Findings: Subcommittees of the Arkansas Blue Ribbon Commission on Public Education*. Retrieved March 2003 from <http://www.educationinarkansas.com/pdfs/RevisedInitKeyFdgs07May02.pdf>

Augenblick, John, Myers, John, & Silverstein, Justin. (2001, January 10). *A Comprehensive Study on the Organization of Kansas School Districts*. Prepared for The Kansas State Board of Education in response to RFP Number 00241. Augenblick & Myers, Inc.

Bailey, J. (2000, January). *The Case for Small Schools*. Walthill, NE: Center for Rural Affairs. Retrieved April 2003 from <http://www.cfra.org/resources/Publications/caseforsmallschools.htm>

Beaumont, C. & Pianca, E. (2000, November). *Historic Neighborhoods in the Age of Sprawl: Why Johnny Can't Walk to School*. Retrieved April 2003 from <http://www.nationaltrust.org/issues/schoolsRpt.pdf>

Beeson, Elizabeth & Strange, Marty. (2003, February). *Why Rural Matters 2003*. Rural School and Community Trust. Washington, D.C.

Bickel, Robert & Howley, Craig. (2000, May 10). The Influence of Scale on School Performance: A Multi-Level Extension of the Matthew Principle. *Education Policy Analysis Archives*, 8 (22), Article ISSN1068-2341. Retrieved March 2003 from <http://olam.ed.asu.edu/epaa/v8n22/>

Cotton, Kathleen. (1996, May). School Size, School Climate, and Student Performance. *School Improvement Research Series*. Retrieved from the Northwest Regional Educational Laboratory Web site: <http://www.nwrel.org/scpd/sirs/10/c020.html>

Cox, David N. (2002, January). *Focus on Utah: Big Trouble: Solving Education Problems Means Rethinking Super-Size Districts and Schools*. Retrieved from The Sutherland Institute Web site: <http://www.sutherlandinstitute.org/Publications/FocusonUtah/SmallerDistricts/SmallerDistricts.htm>

Darling-Hammond, Linda. (1998). Unequal Opportunity: Race and Education. *The Brookings Review*, 16, 28-32 (Spring). Retrieved from <http://www.brook.edu/dybdocroot/press/review/spring98/darling.htm>

Duncombe, William, Miner, Jerry, & Ruggiero, John. (1994, February). *Potential Cost Savings from School District Consolidation: A Case Study of New York*. Retrieved from the Center for Policy Research, Syracuse University Web site: www.cpr.maxwell.syr.edu/efap/publications/scale4.pdf

Duncombe, William & Yinger, John. (2000, December). *Does School District Consolidation Cut Costs?* Retrieved from the Center for Policy Research, Syracuse University Web site: <http://faculty.maxwell.syr.edu/jyinger/school%20consolidation%20paper.pdf>

Ehrenhalt, Alan. (2003, March). The Consolidation Divide. *Governing: The Magazine of States and Localities*, 16 (6), 6-8.

Elliot, Lloyd, (2002, February 13). Restructuring American Education. *Education Week*. Retrieved March 2002 from <http://www.edweek.org/ew/ewstory.cfm?slug=22elliott.h21&keywords=restructuring>

Galles, Gary M. & Sexton, Robert L. (1995). Diseconomies of School District Size. *Journal of Social, Political and Economic Studies*, 20 (2), 241-245. Retrieved March 2003 from <http://docbones.freewebsites.com/article16.htm>

Gregory, Thomas. (2000, December). *School Reform and the No-Man's Land Of High School Size*. Retrieved April 2003 from <http://www.smallschoolsproject.org/articles/download/gregory.pdf>

Hinz, Lisa. (1993). *Size, Cost and Quality in Public Schools and School Districts*. [Electronic version]. Retrieved March 25, 2003 from <http://www.extension.umn.edu/distribution/resourcesandtourism/components/DB6178-3.html>

Howley, Craig. (1996, December). *Ongoing Dilemmas of School Size: A Short Story*. (ERIC Document Reproduction Service No. ED401089). Retrieved March 25, 2003 from <http://ericae.net/ericdb/ed401089.html>

Howley, Craig B. (2000). School District Size and School Performance. *Rural Education Issue Digest*. Retrieved March 2003 from www.ael.org/rel/rural/pdf/digest3.pdf

Howley, Craig, & Bickel, Robert. (2002, March). *Results of Four-State Study: Smaller Schools Reduce Harmful Impact of Poverty on Student Achievement*. Retrieved March 2003 from The Rural School and Community Trust Web site: http://www.ruraledu.org/docs/sapss/nat_sum.html

Imerman, Mark & Otto, Dan. (2003, January 24). *A Preliminary Investigation of School District Expenditures with Respect to School District Size in Iowa*. Retrieved from the Department of Economics Iowa State University Web site: www.econ.iastate.edu/research/webpapers/paper_10183.pdf

Irmsher, Karen. (1997, July). *School Size*. ERIC Digest, 113. Retrieved from <http://www.ericfacility.net/ericdigests/ed414615.html>

Johnson, Jerry D., Howley, Craig B., & Howley, Aimee A. (2002, March). *Small Works in Arkansas: How Poverty and the Size of Schools and School Districts Affect School Performance in Arkansas*. Athens, OH: Ohio University, College of Education, Educational Studies Department. ERIC Document Reproduction Service (forthcoming). Retrieved March 2003 from The Rural School and Community Trust Web site: http://www.ruraledu.org/keep_learning.cfm?record_no=486

Killeen, Kieran, & Sipple, John. (2000, April 24). *School consolidation and Transportation Policy: An Empirical and Institutional Analysis*. A Working Paper for the Rural School and Community Trust Policy Program.

Lawrence, Barbara K., Bingler, Steven; Diamond, Barbara M., Hill, Bobbie; Hoffman, Jerry L., Howley, Craig B., Mitchell, Stacy; Rudolph, David, & Washor, Elliot. (2002, September). *Dollars & Sense: The Cost Effectiveness of Small Schools*. [Electronic version]. Retrieved March 2003 from The Rural School and Community Trust Web site: <http://www.ruraledu.org/docs/dollars.htm>

National Center for Education Statistics. (2002, May). *Overview of Public Elementary and Secondary Schools and Districts: School Year 2000-01*. [Electronic version]. Retrieved March 2003 from <http://www.nces.ed.gov/pubs2002/overview/index.asp>

Rincones, Rodolfo. (1988). *Exploring Alternatives to Consolidation*. (ERIC Document Reproduction Service No. ED296817). Retrieved April 3, 2003 from <http://ericir.syr.edu/plweb-cgi/obtain.pl>

Roeder, Phillip W. (2002, May). *Resisting the Urge to Merge: Does School Size Matter?* [Electronic version]. Retrieved March 2003 from www.uky.edu/~proeder/urbschsize.pdf

Schwartzbeck, Theresa D. (2003, February). *Declining Counties, Declining School Enrollments*. Retrieved April 2003, from http://www.aasa.org/government_relations/rural/Declining_Counties.pdf

Sher, Jonathan P., and Schaller, Karin. (1986, April). *Heavy Meddle: A Critique of the North Carolina Department of Public Instruction's Plan to Mandate School District Mergers Throughout the State*. (ERIC Document Reproduction Service No. ED270245). Retrieved April 2003 from <http://ericir.syr.edu/plweb-cgi/fastweb?getdoc+ericdb-adv+ericdb+908319+0+wAAA+%28ed270245%29>

The Bill & Melinda Gates Foundation. (2003, April). *High Time for High School Reform: Early Findings from the Evaluation of the National School District and Network Grants Program*. Retrieved May 2003, from <http://www.gatesfoundation.org/Education/SmallHighSchools/RelatedInfo/EvaluationNationalSDNetworkGrantsProg-030421.htm>

The Rural School and Community Trust. *Report Cites Urgent Need for Louisiana Policy on Rural Education*. News release, February 12, 2003

The Rural School and Community Trust. (2003, March). *Rural Policy Matters – Vol. 5, No. 3*. Retrieved March 24, 2003 from The Rural School and Community Trust Web site: <http://www.ruraledu.org/rpm/rpm.htm>

The Rural School and Community Trust. (2002). *Study Finds that Small Districts Work, Too*. [Electronic version]. Retrieved March 2003 from http://ruraledu.org/keep_learning.cfm?record_no=429

Viadero, Debra. (2001, November 28). Research: Smaller is Better. *Education Week*. Retrieved April 25, 2003, from <http://www.edweek.org/ew/ewstory.cfm?slug=13small.h21&keywords=smaller>

Williams, Davant T. (1990, December). *The Dimensions of Education: Recent Research on School Size*. Retrieved from The Strom Thurmond Institute Web site: www.strom.clemson.edu/teams/ced/pubs/dim0ed.pdf