Current Issues in Education
Mary Lou Fulton Teachers College • Arizona State University
PO Box 37100, Phoenix, AZ 85069, USA

Volume 13, Number 2 ISSN 1099-839X

A Comparison of the Academic Performance of College Bound High School Students in Regional vs. Community High Schools in Connecticut

Joseph P. Cullen
Appalachian State University

Citation

Cullen, J.P. (2010). A Comparison of the Academic Performance of College Bound High School Students in Regional vs. Community High Schools in Connecticut. *Current Issues in Education*, 13(2). Retrieved from http://cie.asu.edu/

Abstract

Consolidated regional high schools (RHSs) have replaced traditional community high schools (CHSs) in many nonmetropolitan communities. Consolidation purports to offer cost savings that, in theory, enable nonmetropolitan districts to provide a wider array of instructional opportunities to their students. Nonetheless, critics argue that the benefits of consolidation do not outweigh the costs. This inquiry adds to this discussion an examination of differences in performance on the 2006 - 2008 SAT I between RHS and CHS students in Connecticut. Results suggest that RHS students outperformed their CHS counterparts on 15 of 16 points of comparison. Four of these differences were statistically significant.

Keywords: Rural Education, Educational Policy, School Reform, Secondary Education

About the Author(s)

Author: Joseph P. Cullen

Affiliation: Appalachian State University

Email: joe.cullen@familyinnovations.org

Biographical information: Joseph P. Cullen received his Ph.D. in Special Education from the University of Connecticut in 1995. During his 26-year career in the fields of Education and Child Welfare, Dr. Cullen has served in a School Psychologist, Learning Disabilities Specialist, consultant, program director, and university faculty member. He currently serves in a dual capacity as the Director of Research and Evaluation at Appalachian Family Innovations, a university-affiliated research and training program, and as an Associate Professor in Special Education at Appalachian State University in Boone, North Carolina. Dr. Cullen's research and professional interests include school reform, the prevention of child maltreatment, and strategies for working with teachers and families to support children with learning disabilities, ADHD, and emotional and behavioral challenges in school and community settings.

Current Issues in Education

Mary Lou Fulton Teachers College • Arizona State University
PO Box 37100, Phoenix, AZ 85069, USA

For more than a century, educational reformers have been discussing solutions to the challenges of rural schools. As Kannapel and DeYoung (1999) relate, rural schools have traditionally been described as lacking appropriate facilities, curricula, and personnel, leading many to regard them as inferior to schools in metropolitan communities. To improve rural school quality, advocates for reform in the first half of the 20th century relied heavily on the factory paradigm that emerged during the industrial revolution (Bard, Gardener, & Wieland, 2005). In particular, it was thought that rural schools would benefit from the concept of "economies of scale" (i.e., the principle that the production cost per unit is reduced when the size of the operation is increased). In this regard, large consolidated schools were thought to be more efficient and to have lower production costs than small community schools, leaving more resources for the improvement of facilities, curriculum, and the quality of teachers (Fanning, 1995). This trend of thought led to the conclusion that school consolidation -- the unification of two or more attendance areas into one large school (Peshkin, 1982) -- was the premier solution to the challenges of rural schools (Lasley, Leistritz, Lobao, & Meyer, 1995).

By the middle of the 20th century, the pace of rural school consolidation was accelerated by demographic trends that included a decline in the population of rural areas due to a dying agricultural economy and falling birth rates. These factors resulted in diminished resources, especially in rural districts that received state funds on a per pupil basis, and made it difficult for them to upgrade school facilities or offer competitive salaries to teachers or administrators. Consequently, many rural districts could not provide the same educational services and specialty courses as their larger, better-funded, urban and suburban counterparts. Specifically, they were found to be less likely to offer advanced placement (AP) classes along with fewer courses in art, music, literature, foreign language, technology, and laboratory science (Schwartzbeck, 2003).

To address these challenges, Conant (1959), in a highly influential report on secondary school reform, urged the elimination of small high schools as a means of offering a wider range of curricula and improving the cost-effectiveness of secondary education. In addition, elected officials implemented state policies in the 1970s, 80s, and 90s that encouraged school consolidation by requiring districts to meet mandated enrollment levels before they could receive state funds for new school buildings or capital improvements. Many districts were forced to consolidate in order to meet these mandates (DeYoung & Howley, 1990; Purdy, 1992).

Advocates of consolidation at the secondary level also benefited from the political climate of the cold war era. After the launch of Sputnik in 1957, secondary education received a great deal of federal scrutiny, especially in the domains of math and science. The resulting effort to improve instruction in these areas necessitated significant upgrades to educational infrastructure including the modernization of laboratory facilities, the development of curricula, and the training of teachers and support staff. In order to afford these upgrades, many rural secondary schools were forced to consolidate into regional high schools wherein capital and operational costs could be shared among two or more communities (DeYoung, 1989; Ravitch, 1983).

Further accelerating the consolidation movement was the *A Nation at Risk* report (USDE National Commission on Excellence in Education, 1983) and its scathing critique of the nation's public school system. The effect of this report was to shift the emphasis in secondary educational policy away from broad-based curricula to a primary focus on preparation for college. It also resulted in a series of federal mandates aimed at raising professional standards for teachers and increasing facility and academic requirements. These mandates added significantly to the cost of

public schools, creating additional hardship for high schools in nonmetropolitan areas and forcing many to consolidate (Kannapel & DeYoung, 1999).

By the end of the 20th century, rural school consolidation and associated efforts to increase the professionalization of the teaching field were so effectively implemented that large, centralized school districts controlled by credentialed professionals became the accepted standard in our society (Kannapel & DeYoung, 1999). It is, in fact, no longer accurate to refer to consolidation as an exclusively rural phenomenon in that many outlying suburban communities have also joined the consolidation movement (Plucker, Spradlin, Magaro, Chien, & Zapf, 2007). For this reason, this inquiry will use the term *nonmetropolitan,* as proposed by Hobbs (1994), to refer to the rural, small town, and outlying suburban districts that most often experience pressure to consolidate. This change in terminology is particularly well suited to the State of Connecticut, the locale for this inquiry. Connecticut, like many northeastern states, has experienced a demographic shift over the past 25 years. In 1986, approximately 67% of Connecticut school districts were described as small/rural in 1986 (Melnick, Shibles, and Gable, 1986). However, due to the phenomenon of urban sprawl, the population of many rural communities has swelled since the 1980's. These shifts have changed the character of these communities from rural/agrarian to suburban.

Consolidation and the effects of school size

As the United States entered the 21st century, the justification for school consolidation encompassed research on the effects of school size. One such study was done by Horn (1986) who found that, relative to larger schools, teachers in small high schools were less qualified, lower paid, and had fewer opportunities for professional development. In addition, he found that course offerings in small high schools were more limited and guidance counselors and librarians

were less likely to be available. Another study from this era (Monk, 1990) found that school size was one of the most powerful predictors of variation in curriculum offerings in secondary schools.

Nonetheless, recent examinations of the issue of school size have reached conclusions that are at odds with earlier studies. For instance, Monk and Haller (1993) concluded that that the relationship between school size and curriculum was not linear. Rather, they found that it appears to be influenced by factors such as academic subject area, level of course difficulty, school setting, socioeconomic status, faculty unionization, and grade configuration. In addition, other authors have found evidence that small schools have distinct advantages over large schools. They include Cotton (1998) who wrote that the benefits of small schools appear to include higher numbers of students taking academic courses, more attention to student needs, a closer connection with one's community, more positive staff attitudes, higher rates of participation in extracurricular activities, and better attendance. Furthermore, Lee and Burkham (2003) found that small schools have lower dropout rates than their larger counterparts while Lee and Loeb (2000) found that teachers in smaller schools took greater personal responsibility for student learning than teachers in larger schools. As a result, they tended to exhibit better relationships with their students and more confidence in their teaching.

In the domain of school climate, Noguera (2004) cites evidence of student alienation as justification for reorganizing secondary schools into smaller, more personalized learning communities. Efforts to address this factor have resulted in the creation of smaller high schools in distressed inner city districts where student alienation is a significant problem ("Making Room for Literacy in Secondary Schools," 2005; Rubenstein, Reisner, Coon, & Fabiano, 2005). Finally, recent research has provided evidence that smaller schools show higher overall

achievement, more inclusive decision-making processes, less tension between teachers and students, fewer resources devoted to discipline problems, higher rates of parent-teacher involvement, higher morale, and lower levels of frustration and alienation (Plucker, et al., 2007; Steward, 2009). The results of these studies have been used to advocate for changes in educational policy that would give a higher priority to creating and maintaining small community schools (DeYoung & Howley, 1990; Fanning, 1995; Howley, 1989; Kannapel & DeYoung, 1999).

With regard to schools in Connecticut, the subject of this inquiry, Melnick et al. (1986), concluded that there were very few differences between small and large districts in terms of quality. Specifically, small and large schools were not found to vary with respect to per pupil expenditures, percent of students in need of remedial services, performance on state-mandated assessments, or student attendance and persistence rates. Differences favoring larger high schools were, however, found in the number of advanced courses offered and proportion of students who continue on to higher education. In addition, a difference favoring small schools was found in the number of school staff per 1,000 students. These results indicate that the effects of school size in Connecticut mirror national trends; that is, size appears irrelevant to school costs with the primary benefit of large schools being their potential for offering advanced curriculum and the primary benefit of small schools being their potential for offering more individualized attention to students.

Consolidation and consumer satisfaction

Like any government policy, the most important test of school consolidation may occur not in academia but in the court of public opinion. In this regard, the consolidation movement continues to thrive because some communities welcome consolidated schools and perceive them

to be effective at achieving their intended benefits. Specifically, Self (2001) in an evaluation of the effects of school consolidation found that teachers, parents, and students held overwhelmingly positive attitudes toward the consolidation of schools in Ohio in the early 1990s. A follow up survey revealed that major stakeholders continued to perceive consolidation in a positive manner eight years later. In addition, studies supportive of consolidation report that, relative to community high schools, consolidated high schools exhibit: 1) financial advantages, 2) higher and more consistent standards of teacher preparation, 3) more variation in course offerings, and 4) higher faculty salaries (Cummins, Chance, & Steinhoff, 1997; Nelson, 1985; Schwartzbeck, 2003).

Despite these positive perceptions, a growing number of stakeholders have expressed dissatisfaction with the practice of school consolidation. Their criticisms have been positioned within a broader discourse about the ends and means of education and the importance of schools as community centers, not just instructional settings. Specifically, the arguments of advocates for the preservation of small nonmetropolitan schools have focused on: 1) practical problems such as long bus rides and disincentives to participation in extra-curricular activities and 2) philosophical concerns such as social justice and maintaining a meaningful context for learning (Bard, et al., 2005; Fanning, 1995; Fitchen, 1991; Howley & Howley, 2001; Kannapel & DeYoung, 1999; Luloff & Swanson, 1990; Nachtigal, 1982, 1994; Peshkin, 1978).

Regarding practical concerns, Howley and Howley (2001) write that students in consolidated schools are far more likely to have long bus rides than students in small community schools. These lengthy bus rides add significantly to transportation costs that rise more sharply, are less predictable, and offer fewer instructional benefits than the costs associated with educating children in their own communities. In addition, the logistics of providing bus

transportation across broad geographic areas make it difficult for many students to participate in extra-curricular activities. Research has found that consolidated schools show significantly lower rates of student participation in extra-curricular activities than do comparable community schools (Biere, 1995; Cotton, 1998; Fitchen, 1991; Howley & Howley, 1995; Luloff & Swanson, 1990; Nachtigal, 1982). This finding is particularly problematic in light of research indicating that many nonmetropolitan communities value extra-curricular and nonacademic activities as much as academic activities if not more so (DeYoung, 1995; Nachtigal, 1982; Peshkin, 1978; Stern, 1994).

Other examiners have challenged consolidation on the basis of social justice and the importance of creating meaningful contexts for learning. Specifically, a robust body of research suggests that large consolidated schools primarily benefit affluent, college-bound students while small community schools have been found to achieve positive learning outcomes across a broader range of socioeconomic strata (Fowler & Walberg, 1991; Friedkin & Necochea, 1988; Howley, 1995; Lee & Smith, 1997). Another social justice issue concerns the fact that consolidation is often justified by its effectiveness at addressing national goals such as the preparation of workers to compete in the global economy (DeYoung, 1995; Howley, 1997; Howley & Howley, 1995; Post & Stambach, 1999; Theobald & Nachtigal, 1995). This justification weakens local control over public schools, resulting in policies that are less responsive to community values and priorities. For example, in farming communities, modern consolidated high schools that are designed first, and foremost, to prepare students for college often fail to provide learning experiences that are rooted in the community's agricultural heritage (Fanning, 1995; Kannapel & DeYoung, 1999). Fanning (1995) indicates that this lack of connection between school and community results in "place-less" rather than "place-based"

learning; a trend that undermines the meaningfulness of learning contexts and runs contrary to modern movements in curriculum reform such as constructivism (Haas & Lambert, 1995; Herzog & Pittman, 1995; Howley, 1997: Howley & Howley, 1995; Rosenfeld, 1983; Theobald and Nachtigal, 1995).

To re-connect schools to the community, Fanning (1995) argues for a balance between "grounded knowing," which helps children to interpret the events of their lives, and "technical knowing," which enables them to understand the connection of these events with larger human experience (p. 4). Consolidation may be an effective model for promoting technical knowing. However, if it results in impersonal educational institutions devoted primarily to college preparation, then it becomes an ineffective model for promoting grounded knowing outcomes such as good citizenship, healthy relationships, or functional living skills. It also fails to value the importance of community schools as cultural and social centers that enrich the broader community (DeYoung & Lawrence, 1995; Herzog & Pittman, 1995; Nachtigal, 1982; Seal & Harmon, 1995; Stern, 1994).

Current status of school consolidation

Despite the arguments of its detractors, school consolidation is alive and well as an educational policy initiative. The state of Maine, for example, has recently proposed merging its 290 local school districts into 26 regional administrative districts. In addition, the 2007 state budget in Indiana appropriated funds for use by school districts wishing to study the feasibility of consolidation. Furthermore, the legislatures in Kansas, Nebraska and North Dakota have recently debated school consolidation initiatives. Over the past three years, these states, along with Idaho, South Dakota, and Arkansas, have either passed laws or established policies that encourage consolidation (Plucker et al., 2007; Schwartzbeck, 2003).

In light of these trends, there is a need for communities considering the question of consolidation to engage in rigorous cost-benefit analyses relative to community values, culture, and traditions. Do the benefits of an enhanced capacity to offer technical education outweigh the practical and social justice objections to consolidation or the loss of meaningful contexts for learning? Surprisingly, very few quantitative inquiries evaluate the effects of consolidation on the academic performance of students. To inform policy makers on this issue, this inquiry will explore this gap in the literature. It will do so by comparing the scores on college entrance examinations of students in consolidated (also known as regional) high schools with those of students in community high schools. For the purposes of this study, the term regional high school (RHS) will be used to describe a secondary school that was created to serve a consolidated student body from several nonmetropolitan districts. The term community high school (CHS) will be used to refer to a secondary school in a nonmetropolitan area whose student enrollment falls in the bottom quartile in the state census. In addition, CHSs resemble in size, demographics, and geographic location the constituent high schools of districts that have consolidated.

Methods

This investigation utilized a causal-comparative design to address the following research question: On standardized college admissions tests, do students is regional high schools (RHSs) outperform students in community high schools (CHSs)? Given that the districts being studied cannot be randomly selected, a matching procedure was used to assure that the two groups were comparable on key demographic and geographic characteristics. To address the threat of location (Gall, Gall, & Borg, 2006), a standardized instrument (The College Board SAT I) with specific administrative guidelines was used to assure that data were collected under relatively

uniform sets of circumstances. To address the threat of mortality, this inquiry focused on archival data collected from an authoritative source, the Connecticut Education Data and Research (CEDAR) database (2008). This approach assured a 100% response rate among districts in the sample. In addition, with regard to instrumentation, the use of an objectively administered and scored standardized achievement measure eliminated data collector bias as a significant rival hypothesis. Finally, because the data for this investigation were collected in a naturalistic setting, it is free of the threats to external validity mentioned by Campbell and Stanley (1963) with respect to experimental research designs. However, given that the sample for this study is geographically limited, results will not be generalized beyond school districts within the State of Connecticut.

The dependent variable for this investigation was student performance on the College Board SAT I Reasoning Test (SAT I), the premier norm-referenced measure of academic preparedness for college. In that this study compared the performance of two discrete groups of participants, the independent variable was group membership; that is, comparisons were made between Group A: RHS Students and Group B: CHS Students.

The sample for this investigation included 32 high schools – 16 regional and 16 community – with an enrollment in excess of 20,000 students. The two groups used for this investigation were matched using District Reference Group (DRG) as the control variable. The State of Connecticut created District Reference Groups (DRGs) – designated A (the highest) through I (the lowest) – as a means of classifying schools and school districts according to their needs and resources. Specifically, DRGs are groups of districts that have similar geographic, cultural, and socio-economic characteristics. The CSDE assigns districts to DRG groupings based upon data elements from the 2000 Census and 2004 Public School Information System

(PSIS) database. To measure socioeconomic status, the CSDE used three data elements from the 2000 Census: median family income; percentage of parents with a bachelor's degree or higher; and percentage of parents holding jobs in executive, managerial or professional occupations. Three other indicators – the percentage of children living in families with a single parent, the percentage of children enrolled in public schools whose families have incomes that make them eligible to receive free or reduced-price meals, and the proportion of children in the district whose families speak a language other than English at home – were used to assess need. In addition, enrollment in the district at the end of the 2003-2004 academic year was a minor factor in the analysis (CEDAR, 2008).

The first step in sample selection was to establish an operational definition of a small high school. This process involved an analysis of two sources of information. The first was enrollment data on communities that participate in regional high schools. These data were examined to identify benchmarks for selecting a matched sample of schools that would be similar in size to the schools that would be operated by these communities if they did not participate in a regional high school. Based on State of Connecticut K-12 enrollment data (CEDAR, 2008), "head counts" in the elementary grades, which offer a valid prediction of the number of high school aged students in these districts, range from approximately 40 to approximately 800 students. To obtain more precise figures, a second source of information – the 2006 State of Connecticut School Census (CEDAR, 2008) – was analyzed. This document lists 123 comprehensive community high schools with a mean enrollment of 1147 students (standard deviation=589). Based on the mean and standard deviation, it was determined that schools with 750 or fewer students would constitute the bottom quartile in enrollment. Given the similarity between this figure and the upper limit of the elementary "head count" among

communities with regional high schools, it was accepted as a defensible benchmark for selecting schools for the sample. When this benchmark was applied, an initial pool containing the 30 smallest comprehensive public high schools in Connecticut was identified. These schools ranged in size from 231 to 740 students with a mean of 509.13 and a standard deviation of 149.74.

The second step in sample selection was to match regional high schools with community high schools based on the DRG system. To accomplish this in a defensible manner, it was necessary to narrow the range of DRGs in both groups. Therefore, given that the state's 17 regional schools are spread across DRGs A through F, community high schools in lower DRGs (G though I) were eliminated from the CHS pool. By the same token, because there were no community high schools in DRG A, the lone DRG A regional school was eliminated from the RHS pool. In addition, since consolidation appeals primarily to schools in rural areas, small community high schools in suburbs on the fringes of urban centers were eliminated from the CHS pool. To achieve a similar distribution in the RHS and CHS groups on key demographic and geographic variables, schools were matched based on their DRG to the fullest extent possible. However, because of unequal distributions of schools across DRG groups, it was necessary, in some instances, to match schools in higher DRGs with schools in lower DRGs based on a careful examination of demographic data. This strategy was legitimized by the fact that the schools in DRGs C through E are all in middle-income communities that are very similar demographically. The two resulting groups had the following compositions:

(1) The RHS Group was composed of 16 High Schools serving 12,231 students. The group includes one high school from DRG B, 14 from DRGs C through E, and one from DRG F.

(2) The CHS Group was composed of 16 High Schools serving 7,893 students. The group includes one high school from DRG B, 14 from DRGs C through E, and one from DRG F.

Descriptive and inferential statistics were used to verify the comparability of the RHS and CHS groups on the demographic factors that the State of Connecticut uses to assign schools to DRGs; i.e., median family income; percentage of parents with a bachelor's degree or higher; proportion of children's parents who hold jobs in executive, managerial, and/or professional (i.e., "white collar") occupations; percentage of children living with a single-parent; proportion of students who meet eligibility guidelines for free or reduced meals, and percentage of students whose families speak a language other than English at home. In addition, schools were compared on their minority enrollments, number of students per academic computer, and per pupil expenditures. Table 1.1 provides a complete profile of the RHS and CHS groups, including descriptive statistics and t-test results used to evaluate the significance of group differences.

Table 1.1

Descriptions and Comparisons of Research Groups

Source: Connecticut Education Data and Research (CEDAR, 2008)

Schools	Size	DRG	Median Income	% Free/ Reduced Meals	% Minority	% College Degree	% White Collar	% Single Parent	% Non-English Speaking	Students Per Computer	Per Pupil Spending
Regional N=12,231											
Region 1	562	E	$56,591	12.6	3.7	29.4	44.5	30.1	1	1.6	$12,305
Region 4	594	C	$82,620	7.3	6	43.9	50.8	16.3	1.7	1.9	$11,046
Region 5	1678	B	$93,868	1.8	12.7	59.1	63.5	12	3.2	3.5	$10,397
Region 6	390	E	$65,759	7.6	2.6	28.7	38.7	13.7	0.2	2.9	$10,395
Region 7	786	C	$84,090	2.1	2	40.8	56.2	13	0.1	2.0	$11,392
Region 8	1026	C	$81,862	3.6	3	45	51.2	15.1	0.1	2.4	$8,365
Region 10	775	C	$84,246	3.1	4.9	42.5	55	5.3	2.1	2.2	$11,016
Region 11	200	F	$64,732	14.8	5.8	21.5	32.6	20.3	0	1.4	$14,210
Region 12	392	C	$83,514	2.6	6.1	39.9	42.7	10.3	0.8	2.1	$13,510
Region 13	1380	C	$79,900	4.8	3.5	40.2	47.8	16.3	0.2	3.4	$10,040
Region 14	836	C	$82,025	4.6	4.5	46.9	52.6	19.6	1.4	3.7	$9,205
Region 15	814	B	$87,671	1.6	7	53	57.4	9.2	2.4	4.1	$9562
Region 16	679	E	$77,260	8.2	4.9	27.6	35.8	8.8	1.9	3.1	$9,705
Region 17	459	C	$88,307	5.6	3.4	48.3	57.9	9	0.4	3.7	$11,732
Region 18	459	C	$78,025	3.8	5.7	55.5	51.9	18.2	1.8	2.9	$13,538
Region 19	1201	C	$70,239	6.8	11.7	50	58.9	17.3	1.7	2.9	$10,291
Means	764.4		$78,794	5.58	5.47	42.02	49.84	14.66	1.19	2.74	$11,044
SD	408.8		$9,829	3.79	2.98	10.67	8.85	5.96	0.99	.82	$663
Community N=7,893											
Bolton	285	C	$81,293	6.2	6.4	47.4	54.1	16.2	0	3.6	$11,706
Canton	515	C	$76,113	3.5	7.2	47.5	58.6	12.3	1.1	4.1	$10,888
Clinton	663	D	$70,776	7.8	9.7	35.9	45.7	16.2	1.3	3.4	$11,854
Coventry	573	E	$65,707	10.6	5	20.8	40.1	22.7	0.3	3.7	$8,234
E. Granby	241	D	$77,852	1.3	11.2	29.8	49.5	20.6	3.6	3.1	$11,919
E. Haddam	387	E	$68,393	5.4	4.7	29.7	41.1	11.1	1.2	3.3	$9,463
E. Hampton	567	D	$70,400	7.8	5	32.6	44.1	22.1	1.4	4.9	$10,467
Ellington	738	C	$81,196	4.4	7.2	36.1	48.5	13	1.7	3.0	$10,111
Granby	687	B	$92,696	3.4	6.7	57.3	65.4	10.9	1.2	3.1	$10,201
Lebanon	581	E	$66,652	8.1	4.3	26.8	43	13.3	0.7	3.6	$9,776
Litchfield	438	E	$66,809	4.8	5.2	36.5	43.6	14	0	3.5	$11,420
Old Saybrook	462	D	$73,409	7.7	11.1	43.3	44	19.9	5	4.3	$11,294
Plymouth	526	F	$65,917	14	5.4	16.4	33.9	18.8	1.5	4.4	$9,013
Portland	362	E	$68,802	9.9	8.4	38.4	41	25.3	0.6	3.0	$11,811
Somers	574	C	$77,795	4.8	4.4	34.9	46.3	9.5	1.2	3.8	$9,747
Westbrook	294	E	$75,568	9.6	6.5	31.9	35.4	19.4	1.7	2.5	$13,984
Means	493.3		$72,711	6.83	6.78	35.33	45.89	16.58	1.41	3.58	$10,527
SD	119		$7,354	3.24	2.26	10.25	8.10	4.80	1.28	.62	$1,148
t probability	.026		.150	.337	.128	.058	.232	.414	.550	.003	.425

The instrument used to measure the dependent variable in this investigation was the College Board SAT I Reasoning Test (SAT I), a norm-referenced measure of student readiness for college learning with three sections: Critical Reading, Writing, and Math. The SAT I meets the highest standards of technical adequacy in content, construct, and criterion-related validity as well as internal consistency and test re-test reliability. It was deemed an appropriate basis for the comparison of school districts in that it now measures, since its 2006 revision, a set of skills that is closely aligned with college preparatory instruction. In addition, relative to state mastery tests, it offers an elevated ceiling capable of differentiating student performance at higher levels of achievement. Scores from 2006 through 2008 were used for this inquiry, as they are the only scores available since the revision. The Connecticut State Department of Education official database was used as the sole data source for this inquiry. This database compiles official statistics on Connecticut School districts based upon federal census information and superintendents' yearly reports.

With regard to the research question – On standardized achievement tests, do students in regional high schools outperform students in community high schools? – the SAT I scores for the RHS group were compared with those of the CHS group. To assure that group differences were not primarily a function of the size and diversity of the test-taking cohort, the two groups were also compared on the proportion of students who took the SAT I. Given that this inquiry used matched groups, correlated t-tests were used to evaluate group differences. In addition, two-tailed tests with an alpha level of .05 were used for all comparisons. All analyses were performed on the MS Excel spreadsheet with t-test results reported as probability values.

Results

In terms of demographics, Table 1.1 provides a profile of the two groups that were the focus of this inquiry. The reader will note that while the regional schools are consistently higher on most indicators of socioeconomic status, none of the differences between the groups crosses the threshold of statistical significance. However, one indicator, the percentage of parents who are college educated bordered on statistical significance ($p=.058$). Nonetheless, given that both groups exhibited socioeconomic characteristics that were solidly in the middle range, the decision to treat them as comparable is justified.

Aside from demographic contrasts, there are two points of comparison between the two groups that are noteworthy. First of all, the RHS and CHS groups were found to be strikingly similar in terms of per pupil expenditures. This finding is intriguing given the economy of scale argument that is often used to justify consolidation. In fact, the data indicate that the regional high schools sampled spend approximately $600 more per year per student than their community high school counterparts. While this difference is not statistically significant, it is supportive of the conclusion that regional high schools do not appear to offer overall cost savings relative to community high schools. Secondly, there was a significant difference between the two groups in terms of students per academic computer. This difference suggests that the regional schools may offer significantly better access to technology than their community school counterparts.

With regard to the research question, Table 2.1 provides a summary of the 2006, 2007 and 2008 SAT I scores for the two groups. A summary of the 2006-2008 SAT I mean scores can be found in Table 2.2. Both tables also provide the results of correlated t-tests on all 16 points of comparison between the RHS and CHS groups. As these results indicate, the groups were not found to differ in terms of the proportion of students taking the SAT I. However, in 2006,

students in regional high schools obtained higher scores than their community high school counterparts on three out of four points of comparison: Critical Reading (p =.002), Writing (p = .025), and Total Scale (p=.016). In addition, the difference between groups in Math was very close to the threshold of statistical significance (p=.057). In 2007, students in regional high schools earned slightly higher scores than their counterparts in community high schools on three of the four SAT I components (Critical Reading, Writing, and SAT I Total). In Math, the CHS group outperformed the RHS group by a slim margin. These differences, though, were not found to be statistically significant. Similarly, in 2008, students in regional high schools earned slightly higher scores than their counterparts in community high schools on all four SAT I components (Critical Reading, Math, Writing, and SAT I Total). However, these differences were, again, insignificant. Overall, when compared on the basis of 2006 through 2008 SAT I mean scores, students in regional schools outscored students in community high schools on all four components but the only statistically significant difference occurred in Critical Reading (p=.035). The approximate mean score differences in favor of the RHS group were as follows: 11 points in Critical Reading, five points in Math, ten points in Writing, and 26 points on the Total Scale.

Table 2.1
2006 -2008 SAT I Scores for RHS & CHS Groups
Tot=SAT Total; Cre=SAT Critical Reading; Mat = SAT Math; Wri=SAT Writing
Source: Connecticut Education Data and Research (CEDAR, 2008)

	% of Students Tested	2006 SAT I				2007 SAT I				2008 SAT I			
High Schools	06-08	Tot	Cre	Mat	Wri	Tot	Cre	Mat	Wri	Tot	Cre	Mat	Wri
Regional :													
Region 01	64.68	1579	539	519	524	1551	532	501	518	1528	513	505	510
Region 04	81.20	1563	521	525	524	1550	523	504	524	1576	530	519	526
Region 05	92.25	1677	552	566	559	1634	539	548	547	1655	545	551	559
Region 06	75.05	1563	520	517	522	1566	527	531	508	1601	531	531	539
Region 07	83.55	1628	544	548	538	1586	529	533	524	1612	526	551	535
Region 08	83.30	1608	536	542	528	1628	541	550	536	1627	540	552	536
Region 10	85.88	1601	532	527	540	1554	512	521	521	1556	515	520	521
Region 11	74.65	1579	534	515	530	1475	501	468	506	1509	521	477	511
Region 12	88.98	1576	527	527	522	1551	527	504	521	1536	513	506	516
Region 13	77.35	1579	540	530	517	1595	531	530	534	1569	520	522	526
Region 14	91.88	1552	520	518	515	1517	510	498	508	1560	524	508	528
Region 15	95.18	1568	522	528	525	1629	547	546	536	1633	541	551	541
Region 16	71.23	1489	500	499	491	1457	485	487	485	1463	485	490	488
Region 17	85.78	1598	530	531	529	1532	511	512	509	1578	522	528	527
Region 18	79.60	1660	542	567	553	1691	560	569	561	1687	557	565	565
Region 19	72.93	1668	563	558	550	1651	547	560	542	1657	550	561	547
Mean	81.5	1593	532.6	532.3	529.2	1572.9	526.4	522.6	523.8	1584.2	527.1	527.3	529.7
SD	8.5	47.9	14.8	19.2	16.5	63.4	19.1	28.1	18.70	59.8	17.4	26.2	19.1
Community:													
Bolton	77.13	1562	526	512	524	1626	544	538	543	1583	525	511	546
Canton	86.93	1624	531	546	543	1632	535	554	543	1625	537	545	543
Clinton	86.63	1538	515	512	512	1508	495	510	503	1572	521	523	528
Coventry	78.73	1518	510	507	499	1499	506	499	495	1527	516	507	504
E. Granby	71.83	1551	510	548	493	1620	533	561	526	1619	534	562	523
E. Haddam	79.03	1469	494	499	492	1523	497	501	525	1582	522	521	539
E. Hampton	82.10	1530	512	505	514	1527	503	514	511	1615	538	540	538
Ellington	86.90	1572	519	530	526	1549	512	529	508	1554	513	522	519
Granby	80.83	1646	554	549	544	1650	550	553	546	1617	539	542	536
Lebanon	86.78	1469	494	487	490	1490	499	494	497	1529	526	499	503
Litchfield	83.20	1564	509	523	528	1682	556	559	567	1607	528	539	539
Old Saybrook	90.35	1567	504	531	531	1543	510	516	517	1534	510	507	517
Plymouth	75.25	1516	499	512	505	1483	492	499	489	1416	470	482	464
Portland	89.53	1490	491	500	496	1573	522	541	510	1571	528	526	517
Somers	85.15	1568	520	533	519	1636	542	553	541	1551	512	524	515
Westbrook	77.30	1492	507	495	493	1552	515	522	516	1567	524	509	533
Mean	82.4	1542.3	512.2	518.1	513.1	1568.3	519.4	527.7	521.1	1566.8	521.4	522.4	522.8
SD	5.4	50.3	15.9	19.6	18.4	63.9	21.1	23.8	21.9	51.9	16.5	20.1	20.6
t probability	.649	.016	.002	.057	.025	.840	.313	.619	.685	.324	.283	.538	.262

Table 2.2
2006- 2008 SAT I Mean Scores for RHS & CHS Groups
Tot=SAT Total; Cre=SAT Critical Reading; Mat = SAT Math; Wri=SAT Writing
Source: Connecticut Education Data and Research (CEDAR, 2008)

	Mean 2006 – 2008 SAT I Tot	Mean 2006-2008 SAT I Cre	Mean 2006-2008 SAT I Mat	Mean 2006-2008 SAT I Wri
Regional High Schools:				
Region 01	1552.67	528.00	508.33	517.33
Region 04	1563.00	524.67	516.00	524.67
Region 05	1655.33	545.33	555.00	555.00
Region 06	1576.67	526.00	526.33	523.00
Region 07	1608.67	533.00	544.00	532.33
Region 08	1621.00	539.00	548.00	533.33
Region 10	1570.33	519.67	522.67	527.33
Region 11	1521.00	518.67	486.67	515.67
Region 12	1554.33	522.33	512.33	519.67
Region 13	1581.00	530.33	527.33	525.67
Region 14	1543.00	518.00	508.00	517.00
Region 15	1610.00	536.67	541.67	534.00
Region 16	1469.67	490.00	492.00	488.00
Region 17	1569.33	521.00	523.67	521.67
Region 18	1679.33	553.00	567.00	559.67
Region 19	1658.67	553.33	559.67	546.33
Mean	1583.38	528.69	527.42	527.54
SD	54.09	15.46	23.55	16.90
Community High Schools:				
Bolton	1590.33	531.67	520.33	537.67
Canton	1627.00	534.33	548.33	543.00
Clinton	1539.33	510.33	515.00	514.33
Coventry	1514.67	510.67	504.33	499.33
E. Granby	1596.67	525.67	557.00	514.00
E. Haddam	1524.67	504.33	507.00	518.67
E. Hampton	1557.33	517.67	519.67	521.00
Ellington	1558.33	514.67	527.00	517.67
Granby	1637.67	547.67	548.00	542.00
Lebanon	1496.00	506.33	493.33	496.67
Litchfield	1617.67	531.00	540.33	544.67
Old Saybrook	1548.00	508.00	518.00	521.67
Plymouth	1471.67	487.00	497.67	486.00
Portland	1544.67	513.67	522.33	507.67
Somers	1585.00	524.67	536.67	525.00
Westbrook	1537.00	515.33	508.67	514.00
Mean	1559.13	517.69	522.73	518.96
SD	47.10	14.46	18.91	17.00
t probability	.183	.035	.549	.135

Discussion

The results of this inquiry suggest that, relative to community high schools (CHSs), regional high schools (RHSs) may provide a slight academic benefit to college preparatory students as measured by scores on the SAT I. However, this conclusion must be viewed as highly tentative in light of the fact that the most dramatic differences occurred in a single year, 2006, and were not consistent across the three-year period examined. Furthermore, those who would use these results to inform policy decisions should be mindful that the sample for this inquiry is small and drawn exclusively from nonmetropolitan regions of Connecticut. The results cannot, therefore, be generalized nationally or to urban or suburban districts where the relationship between school-level variables and student achievement appears to be much more complex.

Another limitation of this inquiry is the fact that it is focused on the SAT I, a college entrance examination, and its findings are, therefore, limited to students who are bound for college. As a result, it offers few insights into the differences between students in regional and community high schools who are pursuing courses of study that prepare them for postsecondary objectives other than college. This is an especially important consideration in that it is these students that critics describe as being most in need of the more intimate environment of a small community school (Bard et al., 2005; Fitchen, 1991; Luloff & Swanson, 1990; Nachtigal, 1982; Plucker, et al., 2007; Purcell & Shakelford, 2005).

When applied to the consolidation debate, advocates and opponents of consolidation will both find support for their positions in the results of this inquiry. Advocates will argue that their view is validated by the higher SAT I scores of students in regional high schools and data indicating that regional schools offer greater access to technology for a comparable per pupil cost. Opponents will point out that most of the differences between groups on the SAT I are

insignificant and that the ones that reach statistical significance are not sufficiently robust to be considered an advantage for regional schools. In addition, they will point out that the gap between RHSs and CHSs appears to narrow over the three-year period examined in this study. Specifically, in reading, the performance of CHSs improved each year from a mean of 512.2 in 2006 to a mean of 519.4 in 2007 and 521.4 in 2008. Similarly, writing scores improved from 513.1 in 2006 to 521.1 in 2007 and 522.8 in 2008. These trends suggest that the *"Regional Effect"* may be fading. Furthermore, advocates of CHSs will argue that the data from this inquiry do not support the conclusion that regional schools are more cost effective that community schools. This conclusion is consistent with a previous study conducted on a similar sample in the same geographic region (Melnick et al., 1986). Finally, critics of consolidation will point out that the results of this inquiry do not speak to such core concerns as the effects of consolidation on transportation, student participation in extracurricular activities, educational equity, or the context for learning.

Conclusions

The results of this inquiry strongly indicate a need for further research. Specifically, given the size and geographic limitations of the sample, it would be necessary to replicate this study with larger samples, drawn from multiple locales, over a longer period of time before the stability and meaningfulness of these results can be determined. In addition, should meaningful differences be found, further inquiry would be needed to determine the reasons for these differences. A related issue would be to determine why these differences seem to occur more often in Reading and Writing than in Math. Inquiry in this area may also provide an explanation for the finding that, from 2006 through 2008, the gap between regional and community high schools on the SATI reading and writing subtests diminished steadily. Possible areas of inquiry

might include differences in the quality and preparation of teachers, the availability of instructional resources in regional versus community high schools, or the distribution of these resources across socioeconomic strata. Furthermore, since the demonstration of positive academic effects would not alone be sufficient to address the most daunting social, cultural, and philosophical challenges to consolidation, there is a need for policy makers to reflect on existing research and arrive at a consensus position on its benefits and limitations.

While community leaders await the emergence of such a position, they would be wise to look beyond the fiscal benefits of consolidation and engage stakeholders in a deeper discussion of community beliefs regarding the goals and purposes of public education. The relevance of this study to this discussion is that an analysis of data from 32 nonmetropolitan communities in Connecticut provides additional support to the following three conclusions from the literature on school consolidation:

(1) The cost benefits of modern school consolidation may be illusory given that regional schools and small community schools have similar per-pupil expenditures. Therefore, consolidating schools primarily as a cost saving measure may not be a defensible strategy.

(2) Regional high schools appear to offer some limited advantages to college preparatory students as demonstrated by their higher performance on the literacy sections of the SAT I. These differences may be associated with the enhanced curriculum resources of larger schools, including the ability to offer advanced placement classes. However, these benefits may be diminishing as the performance gap between college-bound students in regional vs. community high schools appears to be narrowing and

affordable technology becomes available to add these enhancements to the curriculum of smaller schools.

(3) Large consolidated schools may offer greater access to technology. However, this advantage may be of diminishing importance in light of the growing saturation of technology in American society.

Given the advantages of small schools as described in the literature and the growing body of research on the benefits of small schools for a variety of historically under-performing groups, school leaders in Connecticut and across the country many need to re-examine the assumptions of school consolidation and consider the possibility that "small may be the new big." In this regard, recent research indicates that "small is better" in poor inner-city communities where schools must counteract anomie, normlessness, and the breakdown of institutions that form the fabric of society ("Making Room for Literacy in Secondary Schools," 2005; Rubenstein, Reisner, Coon, & Fabiano, 2005). Similarly, many have suggested that small may be better in remote rural areas where schools are the only institutions that can combat the effects of social isolation (Biere, 1995; Fanning, 1995; Fitchen, 1991; Luloff and Swanson, 1990; Nachtigal, 1982; Peshkin, 1978, 1982). Nonetheless, if we are to heed the admonition of Kannapel and DeYoung (1995) to avoid assuming that all schools suffer from generic problems that lend themselves to generic solutions, then we must also make room for the possibility that, in some communities, larger may continue to be better.

In this regard, one practical recommendation would be to consider the question posed by Fanning (1995); "What should our young people have the chance to learn?" (p.5). If the answer to this question is, as Fanning suggests, a balance of "grounded" (i.e., personal and experiential) with "technical" (i.e., rational and empirical) knowing, then the results of this inquiry suggest

that community schools, which may be more effective at promoting grounded knowing, may wish to actively explore alternatives to consolidation for assisting their students in the development of technical knowing. By the same token, communities served by regional schools, which may offer advantages over community schools in promoting technical knowing, may wish to explore strategies for assisting their students in the development of grounded knowing.

In the domain of technical knowing, communities that wish to preserve their community schools may find in this study the motivation to identify new ways to access talent and resources. One evidence-based option for accomplishing this objective is to develop partnerships with public and private institutions and foundations (Fanning, 1995; Nachtigal, 1994). In addition, to augment and/or avoid consolidation, Schwartzbeck (2003) recommends that districts explore: 1) Cooperative agreements with nearby districts that enable then to share staff, contractual services and/or buildings; 2) Four day work weeks (thus saving on utility and transportation costs); 3) Distance learning; and 4) Using Regional Educational Service Centers (RESCs) to achieve economies of scale in areas such as food and custodial services, special education, and payroll management.

In the domain of grounded knowing, communities that are served by regional and/or consolidated schools may wish to explore the formation of smaller learning communities to promote a sense of cohesion and belongingness among students (Cotton, 1998; "Making Room for Literacy in Secondary Schools," 2005; Noguera, 2004; and Rubenstein, Reisner, Coon, & Fabiano, 2005). This approach, based on the schools-within-schools model (Goodlad, 1984; Murphy, 1991), creates semi-autonomous small schools that are housed within larger schools to achieve learning environments characterized by greater intimacy, improved teacher engagement, and a more positive peer culture.

Finally, the results of this inquiry provide insight into the thorny question of school size. It is noteworthy that although the regional high schools examined in this study were significantly larger than the community high schools sampled, they were not large schools relative to the state mean. Indeed, of the 16 schools studied, eight fell in the bottom quartile in terms of school size ($N \leq 750$) and only three were above the state mean ($N \geq 1147$). It is, therefore, difficult to conclude that the benefits (or lack thereof) of consolidation suggested by this inquiry have much to do with school size. This conclusion fits with prior research on this subject (Melnick et al., 1986) and with the lack of consensus in the literature on the benefits and disadvantages of small versus large schools. It also fits with the conclusion that the factors that mitigate the effects of school size are myriad and appear to include the demographic, socio-economic, cultural, and geographic characteristics of a given community.

References

American Psychological Association. (2001). Publication Manual of the American Psychological Association (5th ed.). Washington, DC: Author

Bard, J., Gardener, C., & Wieland, R. (2005). Rural school consolidation report: History, research summary, conclusions & recommendations. *Report of the National Rural Education Association Consolidation Task Force*. (ERIC Document Reproduction Service No. ED 497 049)

Biere, A. 1995. Community change. In Lasley, et al. *Beyond the amber waves of grain*. Boulder, CO: Westview Press.

Campbell, D., & Stanley, J. (1963). *Experimental and quasi-experimental designs for research.* Boston: Houghton Mifflin Company.

Conant, J. (1959). *The American high school today: A first report to interested citizens.* New York: McGraw-Hill.

Connecticut education data and research (CEDAR, 2008). Retrieved November 20, 2008, from http://www.sde.ct.us/public/cedar.

Cotton, K. (1998). The academic and social effectiveness of small-scale schooling. *Journal of Early Education and Family Review*, *6*, 1, 25-28.

Cummins, C., Chance, E., & Steinhoff, C. (1997). *A model for rural school consolidation: Making sense of the inevitable result of school reform*. Tucson, AZ: Proceedings of the Annual NREA Convention. (ERIC Document Reproduction Service No. ED 413 148)

DeYoung, A. (1989). *Economics and American education: A historical and critical overview of the impact of economic theories on schooling in the United States*. New York: Longman.

DeYoung, A. (1995) *The life and death of a rural American high school: Farewell Little Kanawha.* New York: Garland.

DeYoung, A., & Howley, C. (1990). The political economy of rural school consolidation. *Peabody Journal of Education*, *67*, 63-89.

DeYoung, A., & Lawrence, B. (1995). On hoosiers, yankees, and mountaineers. *Phi Delta Kappan*, *77*, 105.

Fanning, J. (1995). *Rural school consolidation and student learning.* Charleston, WV: U.S. Department of Education, Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED 384 484)

Fitchen, J. (1991). *Endangered spaces, enduring places, change, identity and survival in rural America.* Boulder, CO: Westview Press.

Fowler, W. & Walberg, H. (1991). School size, characteristics, and outcomes. *Educational Evaluation and Policy Analysis, 13,* 189-202.

Friedkin, N. & Necochea, J. (1988). School system size and performance: A contingency perspective. *Educational Evaluation and Policy Analysis*, *10*, 237-249.

Gall, M., Gall, J., & Borg, W. (2006). *Educational research: An introduction* (8th ed.). New York: Longman.

Goodlad, J. (1984). *A place called school*. New York: McGraw-Hill.

Haas, T. & Lambert, R. (1995). To establish the bonds of common purpose and mutual enjoyment. *Phi Delta Kappan*, *77*, 136-142.

Herzog, M., & Pittman, R. (1995). Home, family, and community. *Phi Delta Kappan*, *77*, 113.

Hobbs, D. (1994). Demographic trends in nonmetropolitan America. *Journal of Research in Rural Education, 10,*149-160.

Horn, J. (1986). *A study of rural/small schools and their graduates in a seven state area.* Manhattan, KS: Kansas State University Center for Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED 280 657)

Howley, C. (1989). Synthesis of the effects of school and district size: What research says about achievement in small schools and school districts. *Journal of Rural and Small Schools*, *4*, 1, 2-12.

Howley, C. (1995). The Matthew principle: A West Virginia replication? *Education Policy Analysis Archives*, *3*, 18. (ERIC Document Reproduction Service No. ED 389 503)

Howley, C. (1997). Studying the rural in education: Nation-building, globalization, and school improvement. *Education Policy Analysis Archives*, *5*, 12. (ERIC Document Reproduction Service No. EJ 580 772)

Howley, C., & Howley, A. (1995). The power of babble: Technology and rural education. *Phi Delta Kappan*, *77*, 26-31.

Howley, A. & Howley, C. (2001). Rural school busing. *ERIC Digest.* Eugene, OR*:* ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED 459 969)

Kannapel, P., & DeYoung, A. (1999). The rural school problem in 1999: A review and critique of the literature. *Journal of Research in Rural Education*, *15*, 67-79.

Lasley, P., Leistritz, L., Lobao, L., & Meyer, K (1995). *Beyond the amber waves of grain.* Boulder, CO: Westview Press.

Lee, V. & Burkham, D. (2003). Dropping out of high school: The role of school organization and structure. *American Educational Research Journal, 40*, 353-393.

Lee, V. & Loeb, S. (2000). School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal, 37*, 3-31.

Lee, V. & Smith, J. (1997). High school size: Which works best, and for whom? *Educational Evaluation and Policy Analysis, 19,* 205-227.

Luloff, A. & Swanson, L. (Eds.) (1990). *Education and community*. Boulder: Westview Press.

Making room for literacy in secondary schools (2005). *R&D Alert, 7, 1.* San Francisco: WestEd.

Melnick, S., Shibles, M., & Gable, R. (1986). *A comparative study of the relationships between school district size and selected indicators of educational quality: A report prepared for the Connecticut Association of School Administrators, Small/Rural Schools Committee.* (ERIC Document Reproduction Service No. 305 215)

Monk, D. (1990). *Transcending the effects of school size on the high school curriculum.* Los Vegas, NV: Annual Meeting of the American education finance association. (ERIC Document Reproduction Service No. ED 326 370)

Monk, D. & Haller, E. (1993). Predictors of high school academic course offerings: The role of school size. *American Educational Research Journal*, 30, 3-21.

Murphy, J. (1991). *Restructuring schools: Capturing and assessing the phenomenon*. New York: Teachers College Press.

Nachtigal, P. (Ed.) (1982). *Rural education: In search of a better way.* Boulder, CO: Westview Press.

Nachtigal, P. (1994). *Political trends affecting nonmetropolitan America*. New Orleans, LA: Paper presented at the Rural Education Symposium during the annual conference of the American Educational Research Association. (ERIC Document Reproduction Service No. ED 370 749)

Nelson, E. (1985). *School consolidation* (Report No. 1985-00-00). Eugene, OR: ERIC Clearinghouse on Educational Management. (ERIC Document Reproduction Service No. ED 282 346)

Noguera, P. (2004). Transforming high schools. *Educational Leadership*, *61*, *8*, 26-31.

Peshkin, A. (1978). *Growing up American*. Chicago: University of Chicago Press.

Peshkin, A. (1982). *The imperfect union: School consolidation and community conflict.* Chicago: The University of Chicago Press.

Plucker, J. Spradlin, T. Magaro, M., Chien, R., & Zapf, J. (2007). *Assessing the policy environment for school corporation collaboration, cooperation, and consolidation in Indiana.* Bloomington, IN: University of Indiana Center for Evaluation & Educational Policy. (ERIC Document Reproduction Service No. ED 497 535)

Post, D. & Stambach, A. (1999). District consolidation and rural school closure: E pluribus unum? *Journal of Research in Rural Education*, *15*, 106-117.

Purcell, D. & Shakelford, R. (2005). *An evaluation of the impact of rural school consolidation. What challenges may a new round of rural school consolidations have on the safety, educational performance and social environment of rural communities?* West Lafayette, IN: NREA. (ERIC Document Reproduction Service No. ED 497 051)

Purdy, D. (1997). An economical, thorough, and efficient school system: The West Virginia school building authority and economy of scale numbers. J*ournal of Research in Rural Education*, *12*, 170-182.

Ravitch, D. (1983). *The troubled crusade.* New York: Basic Books.

Rosenfeld, S. (1983). Something old, something new: The wedding of rural education and rural development. *Phi Delta Kappan, 65,* 270-273.

Rubenstein, M., Reisner, E., Coon, M., Fabiano, L., (2005). *New century high schools: Evaluation findings from the second year.* New York: Policy Studies Associates, Inc. (ERIC Document Reproduction Service No. ED 491 882).

Schwartzbeck, T. (2003). *Declining counties, declining school enrollments.* Arlington, VA: American Association of School Administrators. (ERIC Document Reproduction Service No. ED 478 349)

Seal, S. & Harmon, H. (1995). Realities of rural school reform. *Phi Delta Kappan, 77*, 119-124.

Self, T. (2001). *Post-consolidation evaluation: The effects eight years later.* Chicago, Il: Paper presented at the Annual Meeting of the Mid-Western Educational Research Association. (ERIC Document Reproduction Service No. ED 475 492)

Stern, J. (1994). *The condition of education in rural school.* Charleston, WV: U.S. Department of Education, Office of Educational Research and Improvement (ERIC Document Reproduction Service No. ED371935)

Steward, L. (2009). Achievement differences between large and small schools in Texas. *The Rural Educator, 30, 2,* 20-28.

Theobald, P. & Nachtigal. P. (1995). Culture, community and the promise of rural education. *Phi Delta Kappan, 77*, 132-135.

United States Department of Education National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform.* Washington, DC: U.S. Government Printing Office.

Current Issues in Education

http://cie.asu.edu

Volume 13, Number 2 ISSN 1099-839X