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Consolidation and Elimination of North Dakota School Districts: A Research Note

Nicholas Bauroth
North Dakota State University - Main Campus, nicholas.bauroth@ndsu.edu

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Introduction

The movement for school consolidation in the United States achieved its greatest success during the post-War era as the total number of school districts dropped from 108,579 in 1942 to 34,678 by 1962 (U.S. Bureau of the Census 1982). The Midwestern states embraced this movement with Illinois experiencing a decline in district numbers from 12,138 to 1,540, Minnesota from 7,673 to 2,343, Nebraska from 7,009 to 3,264, South Dakota from 3,423 to 2,940, and North Dakota from 2,272 to 986. Indeed, consolidation in these five states alone led to the end of 21,442 school districts during this period, or twenty-nine percent of all dissolutions nationwide. This study examines the implementation of a new policy of school consolidation in North Dakota during the post-War era. It presents a statistical analysis of the implementation of this policy using data from the North Dakota Department of Public Instruction. Finally, the study considers the forces behind school consolidation in North Dakota.

The number of school districts nationwide shrank by more than sixty-eight percent between 1942 and 1962 as states implemented an aggressive policy of consolidation (U.S. Bureau of the Census 1982). This policy dictated that school district boundaries should be "broadened and control centralized," and small districts dissolved altogether (Maxcy 1976, 216). Supporters of consolidation claimed that larger schools provided a better education and higher graduation rates (Friedberger 1996; Zimmerman 2009). In addition, consolidation put qualified experts in charge of education across a city or county (Bard, Gardener, and Weiland 2006). Finally, a single large school district was more efficient than a collection of smaller school districts, thereby reducing overall operational costs (DeYoung and Howley 1990). Given these apparent benefits, school consolidation became a featured element of mid-century progressivism.

In contrast, opponents of consolidation maintained that a school, even a one-room schoolhouse, was more than a collection of chalkboards, desks, and administrators. A school served as a community's collective heart, a crucial necessity for rural towns struggling against economic decline (Reynolds 1999). Efficiencies arising through the creation of large school districts were offset by further erosion of social capital within these desperate communities (Sell and Larstriz 1997).

Empowered by state legislatures, reformers pushed hard for school consolidation, calling into question local control over public education. Their aggressive tactics sometimes led to backlash as rural legislators attempted to protect small school districts. However, consolidation supporters generally got their way through the 1960s.

Despite the general enthusiasm for consolidation, states did not reorganize school districts at the same pace. Indeed, while Midwestern states eliminated thousands of school districts, other states, such as Colorado and Florida, experienced only minor changes in school district numbers (U.S. Bureau of the Census 1982). Even within a state like North Dakota, consolidation and reorganization varied considerably by county.

The literature provides three explanations for variability in school consolidation. The first explanation focuses upon the decline of one-room schoolhouses. As attitudes about education changed and the ability to transport students improved, legislators began to view one-room schoolhouses as expensive anachronisms (Leight and Rinehart 1992). Their elimination lead to the end of thousands of school districts.

The second explanation considers population decline in rural communities. Regions with stagnant or declining populations had less need for school facilities, thereby encouraging consolidation (Talen 2001). However, declining populations were also associated with a shrinking tax base, which meant reduced resources for the remaining schools (Bard, Gardener, and Wieland 2006). In addition, pupils living in the more isolated areas required publicly funded busing to get them to school each day (Holland and Baritelle 1975). This new responsibility proved burdensome for rural school districts, who often received inadequate state support. Given these circumstances, small schoolhouses could still play some role in servicing rural areas.

The third explanation focuses upon government capacity: many rural areas did not have the resources or expertise to implement school consolidation on their own (DeYoung and Howley 1990). Consolidation within these areas required meaningful support from state and county government to succeed. In addition, while consolidation proponents emphasized savings from economies of scale, they downplayed the costs of combining schools, which could be substantial and long lasting (Hanley 2007). Thus, cash-strapped counties and school systems had some incentive to move slowly on consolidation (Friedberger 1996).

## School Consolidation and Reorganization in North Dakota

North Dakota is a rural state with an economy based upon farming, ranching, and resource extraction. The state's population reached its twentieth-century zenith with 680,845 residents in 1930 before embarking on a slow decline that bottomed out at 617,761 in 1970, a 9.3 percent drop over four decades (U.S. Bureau of the Census 1995). However, this decline was unevenly distributed: population loss was greatest amongst rural counties in the interior and western portions of the state. Counties with large cities, such as Cass and Grand Forks, experienced substantial growth.

Most North Dakotan children of this era received their primary and high school education through a fragmented system of country school districts. These districts relied upon one-room schoolhouses to reach the more isolated students (Robinson 1966). Education experts deplored the state's reliance on one-room schoolhouses, asserting that such schools were more expensive to operate and produced lower graduation rates than larger schools (Kanson 1946). Reporting to the state legislature in 1913, the State Inspector of Elementary Schools described the many deficiencies of one-room schoolhouses (Macdonald 1913). He recommended the consolidation of rural schools, particularly one-room facilities, into larger, more efficient operations. This approach

became a part of the state's education policy, though the extent to which the legislature actively pursued consolidation varied over time.

Figure 1 illustrates the shift away from a reliance upon one-room schoolhouses. In 1920, more than forty-seven percent of pupils in North Dakota received their education via such facilities.[i] However, there was considerable variability across the state: in some counties, such as Billings, Kidder, and Stark, over 87 percent of pupils attended one-room schoolhouses while in others, such as Cass and Grand Forks, less than 30 percent did so. By 1964, the state's reliance had dropped beneath four percent, with only seven counties reporting enrollments of ten percent or higher. Seven counties no longer used one-room schoolhouses at all.
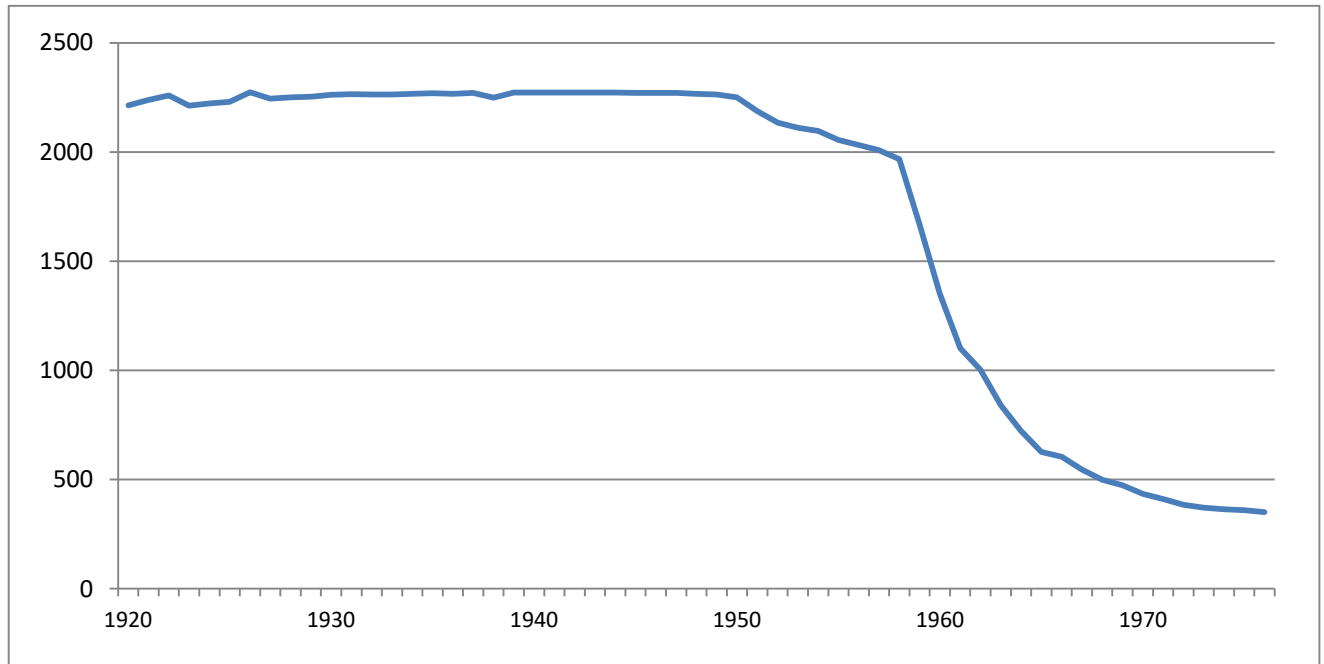
Figure 1: Percent of North Dakota pupils enrolled in one-room schoolhouses, 1920-1964
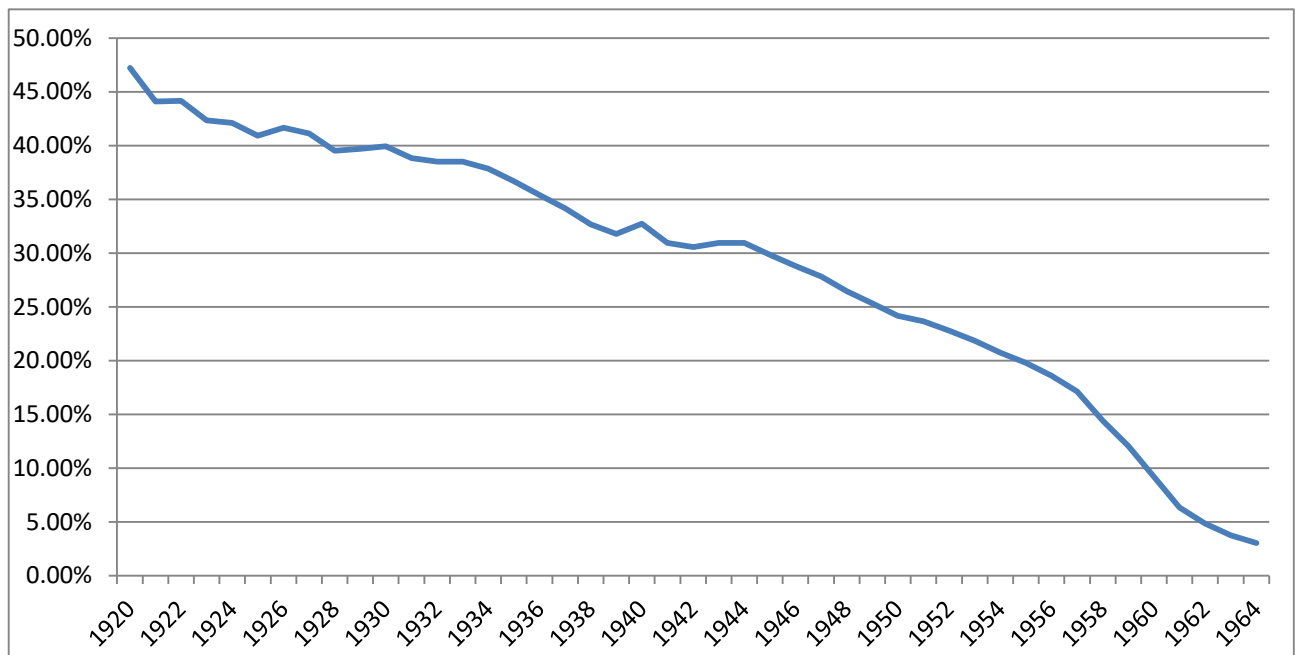
North Dakota Department of Public Instruction, 1920-1964

Despite declining enrollments in the rural areas, the number of public school districts remained static, drifting from 2,214 in 1920 to 2,250 by 1950 (North Dakota Superintendent of Public Instruction 1920; 1950). This stability contrasted with the total number of pupils enrolled in public schools, which fell statewide from 168,446 to 114,488, a 32 percent decline. Thus, hundreds of school districts continued to function in a legal sense despite having few students within their boundaries. Indeed, in 1946, some 161 school districts did not have a single operating school at all (State Committee on School District Reorganization 1948b). As Figure 2 demonstrates, though, school district numbers began to dip in the 1950s.

Figure 2: Total Number of Operating and Non-Operating School Districts in North Dakota, 1920-1976

North Dakota Department of Public Instruction, 1920-1976

For context, there were 120,679 pupils enrolled in 178 public school districts across the state in 2017 (North Dakota Department of Education 2018a; 2018b).

Thus, the central question is set: despite shifting populations, declining enrollments, and steady migration away from one-room schoolhouses, the number of school districts remained high. Suddenly, district numbers declined dramatically. How did the state pull this off?

To start with, the sprawling nature of North Dakota's public school system was unplanned. There were two approaches to the incorporation of school districts at the time of statehood: districts in five of the more populous counties organized under a system by which boundaries were determined on a community-by-community basis (Leno 1952). Districts elsewhere incorporated with borders coterminous with established townships. The legislature resolved this discrepancy in 1890 such that new districts had to be coterminous with townships. With 1,378 townships, North Dakota soon had an excessive number of districts relative to its population (US Census of Governments 1957). In addition, some townships formed districts to operate elementary schools and separate, overlapping districts to oversee high schools. Consequently, the number of school districts reached 2,214 by 1920 (North Dakota State Superintendent for Public Education 1920).

Despite worries about the viability of such a system, the legislature provided few avenues for consolidation. An 1899 law allowed county commissioners to alter school district boundaries upon petition by one-third of the voters in the affected area (Hanson 1946). A 1911 law expanded this power, permitting county commissioners and county superintendents of public education to consolidate school districts on their own volition. However, this autonomy was eliminated in 1917 by a law requiring consolidation be submitted for a public vote. Finally, a 1933 law allowed a school district to annex land from another district up to the point of full consolidation if petitioned by two-thirds of the voters in the affected districts (Peterson 1947). The county commission then scheduled a special election to approve annexation.

It was difficult to eliminate school districts under state law. Making the task near impossible was deep-rooted opposition at the local level, driven by a variety of fiscal and cultural factors. First, public schools were largely funded through property taxes (Beaver 1955). People living in small, low-taxing districts were reluctant to consolidate into larger districts out of a fear of higher tax rates. Second, state aid was often distributed on a per-school rather than a per-pupil basis, which benefitted districts with one-room schoolhouses. Third, many districts only had elementary schools, forcing local students to attend high school elsewhere (Peterson 1947). State law required districts with high schools to carry this additional burden on their own, including the cost of transportation, thereby benefitting residents of those smaller districts. Fourth, the lack of good roads made busing children difficult, particularly during the winter (Beaver 1955). Finally, school board members were unwilling to give up the prestige and small stipend that went with the post.

The most important source of opposition, though, came out of the belief that closing schools would serve as a final blow to struggling communities in North Dakota (Peterson 1947). The rural counties had steadily depopulated over the twentieth century, a trend exasperated by the bad economies of the 1930s. As more people and businesses moved away, the local school became a focal point of civic pride.

In 1945, the North Dakota state assembly created the Interim Legislative Research Committee to explore ways of modernizing government (Carroll 1948). Composed of six state representatives and five state senators, the Committee met with Governor Fred Aandahl, who suggested examining school consolidation and reorganization. Other Midwestern states were already in the process of implementing reorganization plans and Governor Aandahl thought North Dakota should keep pace. The Committee studied these efforts and consulted local education organizations to determine whether such policies were appropriate. They submitted a plan to the full legislature with the support of the state Superintendent of Public Instruction, the North Dakota Education Association, and the North Dakota Congress of Parents and Teachers (Skroch 1988).

In 1947, the state legislature passed House Bill 43 for the reorganization of school districts. The new law called for the creation of a six-member State Committee on School District Reorganization appointed by the Governor, the Attorney General, and

the Agricultural Commissioner (Skroch 1988). Once established, the State Committee transmitted instructions for school reorganization to county superintendents of public instruction across the state. Despite a slow start, this policy sparked a reduction in public school districts that continued into the 1960s.

Implementation of School Consolidation in North Dakota: A Statistical Analysis

The study uses data from the North Dakota Department of Public Instruction in its statistical analysis of school consolidation. Each year, the Department collects information on schools and school districts from across the state and organizes it by county. The dependent variable is 'school districts per hundred public school pupils' for each year from 1950 to 1966. This per capita measure allows for direct comparisons between counties no matter size or circumstances. The underlying assumption is that all counties ultimately sought the elimination of superfluous school districts. Their actions led to a general decline in district numbers. However, some counties had greater success in these efforts than other counties. This study considers three hypotheses to account for such differences.

Hypothesis One: Lagged two years, a county's reliance upon one-room schoolhouses (defined as 'percent of public school students enrolled in a one-room schoolhouse') has a positive association with 'school districts per 100 public school pupils.'

In the 1940s, many one-room schoolhouses in North Dakota were overseen by their own individual school district. This tendency contributed greatly to the growth in school district numbers statewide. However, closure of a one-room schoolhouse did not necessarily bring about dissolution of the corresponding district. Instead, these school districts continued to function as legal entities (State Committee on School District Reorganization 1948). Despite a continuous decline in the percentage of pupils enrolled in one-room schoolhouses, the number of school districts remained steady. With passage of House Bill 43, though, counties found it much easier to eliminate unnecessary governments. Thus, a decline in a county's reliance upon one-room schoolhouses became associated with a subsequent decline in school districts.

Hypothesis Two: Lagged two years, a county's population density (defined as 'public school pupils per square mile') has a negative association with 'school districts per 100 public school pupils.'

The literature suggests that population decline makes it increasingly expensive to provide educational services across rural areas (Holland and Baritelle 1975; Bard, Gardener, and Wieland 2006). With limited resources, rural counties may be tempted to maintain the old system of one-room schoolhouses and school districts for the time being. In contrast, school districts in populous areas have the resources to combine their schools into larger, supposedly more efficient facilities. Thus, a decline in population density is associated with maintenance of the existing system and, consequently, a subsequent increase in school districts per capita.

Hypothesis Three: Lagged two years, a county's government capacity (defined as 'public school taxes per pupil') has a negative association with 'school districts per 100 public school pupils.'

Many counties did not have the resources or expertise to implement school consolidation on their own (DeYoung and Howley 1990). Consequently, cash-strapped counties and their school systems had a strong incentive to move slowly despite the possibility of long-term savings (Friedberger 1996). Thus, higher school taxes per pupil is associated with a greater capacity by counties to reorganize and eliminate school districts. School taxes per pupil are calculated using 1965 dollars.

The full model is conceptualized as: School districts per 100 pupils = reliance upon one-room schoolhouses (lagged) - pupils per square mile (lagged) - total school taxes per pupil (lagged).

Given the literature, this study expects that the decline of one-room schoolhouses will have the greatest impact upon the dependent variable.

Results and Analysis

The study uses STATA to analyze a panel dataset on 53 counties across seventeen years. There are no missing cases.

Table 1 presents descriptive statistics for all variables. As can be seen, there is considerable variability on these county-level measures. The number of school districts per 100 pupils ranges from 0.136 to 10.069 during this period, with a mean of 1.592. The standard deviation is 1.336. Likewise, the percent of pupils attending one-room schoolhouses runs from 0.00 percent to 76.2 percent, with a mean of 20.8 percent. The standard deviation is 15.7 percent. School taxes per pupil ranges from $42.04 to $386.67, with a mean of $150.36. The standard deviation is $38.838. Finally, population density ranges from 0.16 pupils per square mile to 8.55, with a mean of 1.778. The standard deviation is 1.112 pupils per square mile.

Table 1: Descriptive Statistics by North Dakota County

	Mean	Standard Deviation	Minimum	Maximum
School Districts per 100 Pupils, 1950 – 1966	1.592	1.336	0.136	10.069
Percent of Pupils in One-Room	0.208	0.157	0.000	0.762

School Houses,1948 – 1964				
School District Taxes per Pupil, 1948 – 1964 (Constant dollars)	$150.36	38.838	$42.04	$386.67
Pupils per Square Mile,1948 – 1964	1.778	1.112	0.16	8.55

N=901

The next step is to determine the relationship between variables over time and county. The panel data set used in the analysis is strongly balanced since "each panel contains the same time points" (Williams 2017, 3). The Hausman test indicates that, when applied to this dataset, there are significant differences between the results for a fixed effects regression model versus a random effects regression model. A fixed-effects model is designed for measures that vary over time (STATA 2013). Consequently, the study uses a fixed-effects regression model. Finally, the mean Variance Inflation Factor score for this dataset is 4.25, indicating multicollinearity is not a serious problem. The regression results are in Table 2.

Table 2: Explanations for Changes in School Districts per 100 Pupils by North Dakota County, 1950-1966

	Coefficient	Standard Error
Percent of Pupils in One-Room School Houses (lagged 2 years)	5.612 ***	0.1837
School District Taxes per Pupil (lagged 2 years)	-0.002 ***	0.0008
Pupils per Square Mile (lagged 2 years)	-0.156 ***	0.0483

Cons.	1.041 ***	0.1720

*= 0.1, **=0.05, ***=0.01.

R-square: within = 0.5614, between = 0.5841, overall = 0.5770.

Rho = 0.6787

Mean VIF = 4.25

N = 901

As Table 2 shows, the full model is significant and effective in accounting for changes to 'school districts per 100 pupils' across time with an overall R-square of 0.5770. The variable 'percent of pupils in one-room schoolhouses' (lagged 2 years) is, by far, the best predictor of changes to the dependent variable. Indeed, a ten percent decrease in a county's reliance upon one-room schoolhouses is associated with a subsequent decrease of 0.5612 school districts per 100 students in that county. Thus, the elimination of one-room facilities and their associated school districts is the most important factor in understanding school consolidation in North Dakota.

The regression model shows that 'pupils per square mile' (lagged 2 years) has a significant and negative relationship with the dependent variable. A county experiencing an increase in population density of an additional student per mile sees a corresponding decline two years later of 0.156 school districts per 100 students. Conversely, counties with shrinking populations have much greater difficulties reorganizing school districts. In isolation, population decline is associated with a more school districts per 100 pupils.

Finally, the regression analysis considers the importance of government capacity through its examination of school taxes across a county. 'School district taxes per pupil' (lagged 2 years) has a significant and negative relationship with the dependent variable. Thus, a county experiencing a ten dollar rise in school district taxes per pupil sees a subsequent decline of 0.0225 school districts per 100 students.

Conclusion

Three findings can be derived from this study. First, the decline of one-room schoolhouses was the central factor behind rapid consolidation in North Dakota during the post-War era. In 1940, some 32.7 percent of public school pupils attended such facilities. However, with the implementation of a new statewide policy on consolidation, counties eliminated hundreds of superfluous or inactive schools and school districts. By 1960, the percent enrolled in one-room schoolhouses had dropped to 9.2 percent. This had a corresponding effect on school districts, which fell from 2,272 to 1,351, or nearly

forty-one percent. Indeed, by 1965, there were only 627 school districts left. While population density and government capacity were also relevant, changes in a county's reliance on one-room schoolhouses drove the subsequent elimination of school districts.

Second, the elimination of school districts made the fragmented system of governance in North Dakota a little less fragmented. In 1952, North Dakota had 3,968 local governments, consisting of 348 municipalities, 2,079 school districts, 53 counties, 1,393 townships, and 94 special districts (U.S. Bureau of the Census 1982). By 1962, the state had 'only' 3,029 local governments: school district numbers were down to 986, or 52.6 percent, while all other local governments rose by 'only' 160, or 8.5 percent.

Finally, stagnant population growth within rural counties made school consolidation seem inevitable in many states during the 1950s and 1960s. Indeed, consolidation supporters highlighted rural stagnancy as their key justification for the elimination of school facilities. Population growth and decline would continue to be an important part of consolidation debates into the 1970s and beyond, but other arguments in support of consolidation would arise, such as ideology, lower taxes, and a desire by the state for greater control over local schools.

Nicholas Bauroth is an associate professor in the Department of Criminal Justice and Political Science at North Dakota State University, Fargo, North Dakota. He received his PhD at Loyola University of Chicago.

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[i] The North Dakota Department of Public Instruction collects and organizes data on schools from the counties, which it releases to the public as biennial reports. This study utilized the Biennial Reports from 1920 through 1969 to calculate the number of pupils in one-room schoolhouses.