The relationship between community size of Montana public elementary and high school districts and selected fiscal and economic characteristics
by Eldora Burns Nielson

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University

Abstract:
This study investigated relationships between public elementary and high school district fiscal and economic characteristics and community size. Examination of available databases from an extremely rural state was anticipated to contribute to a better understanding of the costs, attributes, and correlations between fiscal elements of rural and small schools, and to begin to unwrap some of the myths and "common wisdom" that pervade the literature and the discussions of those schools.

Data from the 537 Montana school districts operating during school year 1988-89 were used to examine instructional expenditures, overhead expenditures, average teacher salary, taxpayer ability to support schools, local taxpayer support of schools, instructional program level (high school and elementary), and the community size of the school district.

Analyses using two-way ANOVA, multiple comparison methods, and multiple regression techniques indicated that several differences and relationships were statistically significant.

Instructional expenditures, overhead expenditures, average teacher salary, and taxpayer effort were significantly higher for the high school districts. Teacher salary level appeared to be independent of the other fiscal characteristics of this study, but showed a significant relationship to community size and instructional level. Overhead costs for school districts were highly correlated with instructional expenditures which excluded salaries and benefits.

Taxpayer ability to support schools appeared to be the only one of five fiscal variables randomly distributed and not significantly related to size of community or instructional level. HoWever, the amount taxpayers provide to local school districts was highly correlated with the taxable valuation of the district.

The two extreme rural community size groups were significantly higher than at least one other community size group in instructional expenditures, overhead expenditures, and taxpayer effort, and significantly lower in average teacher salary. For all four of those variables, the extreme rural high school districts were significantly higher than the elementary districts.

THE RELATIONSHIP BETWEEN COMMUNITY SIZE OF MONTANA PUBLIC ELEMENTARY AND HIGH SCHOOL DISTRICTS AND SELECTED FISCAL AND ECONOMIC CHARACTERISTICS

by

Eldora Burns Nielson

A thesis submitted in partial fulfillment
of the requirements for the degree

of

Doctor of Education

MONTANA STATE UNIVERSITY
Bozeman, Montana

October 1991

APPROVAL

of a thesis submitted by

Eldora Burns Nielson

This thesis has been read by each member of the graduate committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

10/21/91 Donald L. Gibson
Date Chairperson, Graduate Committee

Approved for the Major Department

Oct 29, 1991 Duane Mellenger
Date Head, Major Department

Approved for the College of Graduate Studies

November 5, 1991 Henry L. Parsons
Date Graduate Dean

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a doctoral degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library. I further agree that copying of this thesis is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for extensive copying or reproduction of this thesis should be referred to University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106, to whom I have granted "the exclusive right to reproduce and distribute copies of the dissertation in and from microfilm and the right to reproduce and distribute by abstract in any format."

Signature Eldora Burns Nielsen

Date October 21, 1991

ACKNOWLEDGEMENTS

Sincere appreciation is extended to my committee: Drs. Donald Robson, LeRoy Casagranda, Duane Melling, William Hall, Robert Thibeault, and Arthur Coffin.

I also wish to acknowledge those who, over the last few years of this endeavor, contributed faith, laughter, hospitality, time, support, and endless patience. Special thanks are extended to my children who cheered, my co-workers who endured, my friends who encouraged, and my parents who evoked recollections of less complicated times. And I ask forgiveness from those who were the victims of my curtness, impatience, inattentiveness, and distraction.

My most recent memories of generous support demand that I name some individuals: Don Robson for assistance above and beyond the call of advisorship; Gary Conti for his expertise and wisdom; Nancy Keenan for space and energy; Judy Harrison for skill and serenity; and Coop, Jo, and Marlene for love, shoulders, and a pillow for a weary head.

Bless you.

TABLE OF CONTENTS

TABLE OF CONTENTS--Continued

TABLE OF CONTENTS--Continued

LIST OF TABLES

LIST OF TABLES--Continued

LIST OF TABLES--Continued

LIST OF FIGURES

ABSTRACT

This study investigated relationships between public elementary and high school district fiscal and economic characteristics and community size. Examination of available databases from an extremely rural state was anticipated to contribute to a better understanding of the costs, attributes, and correlations between fiscal elements of rural and small schools, and to begin to unwrap some of the myths and "common wisdom" that pervade the literature and the discussions of those schools.

Data from the 537 Montana school districts operating during school year 1988-89 were used to examine instructional expenditures, overhead expenditures, average teacher salary, taxpayer ability to support schools, local taxpayer support of schools, instructional program level (high school and elementary), and the community size of the school district.

Analyses using two-way ANOVA, multiple comparison methods, and multiple regression techniques indicated that several differences and relationships were statistically significant.

Instructional expenditures, overhead expenditures, average teacher salary, and taxpayer effort were significantly higher for the high school districts. Teacher salary level appeared to be independent of the other fiscal characteristics of this study, but showed a significant relationship to community size and instructional level. Overhead costs for school districts were highly correlated with instructional expenditures which excluded salaries and benefits.

Taxpayer ability to support schools appeared to be the only one of five fiscal variables randomly distributed and not significantly related to size of community or instructional level. However, the amount taxpayers provide to local school districts was highly correlated with the taxable valuation of the district.

The two extreme rural community size groups were significantly higher than at least one other community size group in instructional expenditures, overhead expenditures, and taxpayer effort, and significantly lower in average teacher salary. For all four of those variables, the extreme rural high school districts were significantly higher than the elementary districts.

CHAPTER 1

INTRODUCTION

Historical Perspective

A convergence of industrialism and urbanization in America in the middle decades of the 19th century transformed a nation of village schools into an America of urban-industrial model schools. Cities were besieged with social and economic problems as the urban population grew from less than 700,000 to over 6,000,000 in a 40-year period from 1820 to 1860 (Tyack, 1974). The village school structure could not absorb the masses of children, and thousands were unable to attend school. Chaotic conditions demanded changes in urban educational organization, which would serve other need for change as well. The pre-industrial rural values, culture, and attitudes could be molded to serve a modern society. The immigrants who streamed into the cities could be Americanized.

Centralization of schools was seen as desirable and irreversible. As America embraced a social policy of urbanization, schooling became compulsory and a function of the state. Rural schools were considered obsolete; the future was in the cities.

The industrial model which was transforming the cities was applied to solve the urban school problems. The model proselytized quantity, order, efficiency, division of labor, punctuality, authority, precision, continuity, and standardization. By the end of the century the model was extended beyond the cities; the Commission of Twelve on Rural Schools proposed applying the urban industrial model to remedy perceived rural school problems. Rural and village schools had flexible calendars, non-standard curriculum, ungraded groups, often substandard facilities, and minimal funding (Tyack, 1974).

In an attempt to hasten the "uniformity of excellence" envisioned by John D. Philbrick, sweeping school consolidation took place in America in the late 19th and early 20th centuries. Following World War I, school consolidation and centralization efforts declined somewhat because immigration had slowed to a trickle after passage of the Immigration Act of 1924, and ruralness had gathered growing respect with the recognition of farming as a legitimate business (Tyack, 1974).

Then in the mid-1940s, following World War II, rural education issues were resurrected and the consolidation drive was renewed. Policymakers and professionals became crusaders in their drive to reduce the number of small school districts. In 1950, the United States had 83,718 school districts, in 1960 only 40,500 remained, in 1970 there were 17,995 (Sher, 1977), and by 1980 the total was reduced to 15,766 (Burrup & Brimley,

1982). David Tyack (1974), education historian, noted, "In their diagnosis and prescription, the rural school reformers blended economic realism with nostalgia, and efficient professionalism with evangelical righteousness" (p. 199). The rural communities passionately resisted the consolidations of their schools, fearing a loss of community as they knew it. The rural cycle and economy were based on nature, not time; on broad responsibilities, not specialization; and on the family and locality, not the state.

Little empirical research exists to support either the evangelists of consolidation or the resisters. "Common wisdom" assumed the benefits of larger schools; "rural values" presumed the superiority of a traditional system. A report issued by the National Institute of Education (1985, p. 14) stated that "there has not been a sufficient database to argue rationally the pros and cons" of consolidation. Rincones (1988) indicated there was no compiled information to establish that consolidation solved any of the problems for which it was advocated, whether for fiscal, economic, or curriculum reasons. Research into comparisons of the actual costs, savings, and educational benefits associated with either a rural or an urban model is almost nonexistent.

Despite the fact that research does not document the benefits nor acknowledge the liabilities of school consolidation, Jonathan Sher suggested that consolidation was the most successfully implemented education policy of the last 50 years:

> Indeed, one of the great ironies of American rural education is that problems resulting from policies of neglect seem to be exceeded only by the damage wrought by policies of active reform. (Sher, 1977, p. 272)

In the 1980s, the consolidation debate continued, but with less vigor. William Chance (1986) observed that consolidation proposals in the 1980s in Illinois and Washington generated a storm but were received by the legislatures "with enthusiasm given a dead mouse in a soup bowl" (p. 156). Proposals for consolidation or unification of districts in the 1987 Montana legislative session attracted hundreds of opponents from rural schools, in the 1989 session a single forced-unification proposal met a quiet demise, and in the 1991 session a proposal to combine elementary and high school districts with the same boundaries through voluntary "attachment" of districts elicited consensus and passed easily through both chambers (Montana House Education and Cultural Affairs Committee, 1987, 1989, 1991).

New challenges faced rural schools in the 1980s. Brown and Deavers (1988) pointed out that economic stress was felt throughout rural America. Extractive resource industry production declined; rural unemployment increased. Rural businesses closed; property values declined. The recession in America in the early 1980s was accompanied by drought; rural banks failed, many farmers left their land. This rural exodus was different from earlier ones (Richter, 1986). The major displacement occurred among the young and well-educated, not the poorly-educated tenant farmers as in earlier years. Rural Americans saw their children leaving and tax bases

shrinking. Rural schools were impacted with declining enrollment, higher costs per student, and shrinking tax bases with which to raise additional school funding. State governments also felt the fiscal stress, and taxpayer revolts resulted in tax freezes in several states. Funds were unavailable at the state level to assist school districts in distress, further impacting the inability of school districts to reinforce school budgets with local funding.

At the same time schools were struggling with fiscal burdens, they were also being pressured to improve educational programs. The quality of American education was strongly criticized in major reports: *The Paideia Proposal* — Adler, 1982; *High School: A Report on Secondary Education in America* — Boyer, 1983; *A Nation at Risk* — The National Commission on Excellence in Education, 1983; and *A Place Called School* — Goodlad, 1984. However, many rural districts did not have the financial resources to revamp programs. Data from a 17-state sample were used by the Northwest Regional Laboratory in Portland to project that 28% of small, rural school districts were poor in terms of family wealth, per pupil expenditure, and student achievement indicators (National Rural, Small Schools Task Force, 1988).

Rural education received some positive attention in the 1980s, however. The United States Department of Education adopted a policy to provide rural schools with an equitable share of the information, services, assistance, and funds available through the Department of Education (Bell, 1983). In 1983,

the National Center for Education Statistics (NCES) began to compile data separately for schools of less than 300 students. Prior to that time no attention was given to data from small schools. Federal funds also were made available for regional educational laboratories to explore issues in rural education and search out promising practices in rural schools (Barker, 1985). The National Rural, Small Schools Task Force (1988) reported that technical assistance could be useful in helping rural schools solve their own problems.

America became an urban nation, but rural America did not cease to exist. At one time cities subsidized the larger rural population needs with government services, processing of raw materials, cultural activities, etc. Now rural America subsidizes economic and aesthetic needs of the greater urban population with food, mining, fishing, forestry, skiing, scenery, mountains, lakes, and parks. Rural has not become obsolete. Transporting rural America's children to larger schools does not diminish the physical distances nor increase the sparse rural populations.

What are the effects of schooling on students in sparsely settled rural areas? Are there economic differences between rural and urban school districts? If differences exist, what contributes to those differences? What size school appears to be too small? What size appears to be too large? Are urban schools more effective than rural schools?

Rural Education Research Needs

Answers to questions about rural education are difficult to locate. The research is replete with requests for increased studies in rural education. The literature is sprinkled with negative descriptors of rural education research: startlingly inadequate, limited, non-additive (Barker, 1985); not sufficient, little useable data (National Institute of Education, 1985); poor quality (McIntire, 1989); rhetoric, minuscule supply of competent studies (Sher & Schaller, 1986).

Barker and Stephens (1985, p. 4) presented the nine rural education areas identified by the National Rural Education Association (NREA) for increased research:

(1) rural school effectiveness,
(2) staff development and professional support,
(3) curriculum and instruction,
(4) taxonomy of rural education,
(5) federal, state, and rural policies,
(6) rural school finances,
(7) school district governance and organization,
(8) assessment of rural school assumptions, and
(9) role of the school in rural development.

Barker and Stephens concluded that all nine areas were inadequate to provide policymakers with data analysis for decisions.

The McREL Rural Education Project (National Institute of Education, 1985) sought to address the fourth and ninth items on the NREA's agenda

by attempting to identify unique characteristics of small, rural schools and to develop the capacity of the community. The project report observed that economies of scale have not been documented, and little usable data are available to assist in knowing about rural schools. The report concluded that the database was not sufficient to argue rationally the values of various practices.

Another rural education group, a national intra-agency Committee on Rural Education, listed their priorities for research in the rural setting: (1) relationship of major issues to geographic isolation, inadequate resources, and sparse population; (2) more effective transportation, richer curriculum, and improved support services; and (3) the use of technology (Barker, 1985).

Individual rural education researchers also listed research areas they felt were inadequate. McIntire (1989) suggested five topics which need additional research: (1) equity in rural education; (2) effective school research looking for models for rural education; (3) information that can be obtained from large available databases; (4) the use of context as a variable, rather than just content orientation; and (5) the need for more comparative studies. Marshall (1986) called attention to the need for research to distinguish between ruralness and smallness, and the effects of distance and isolation on programs and achievement.

In 1989, Carlson felt future rural education research should focus on understanding the demographics, character, size, organization, culture, and the commitment to quality and equity of schools in an effort to identify potential explanations for the differences between schools. Twelve years earlier, rural education researchers had listed similar needs for rural education analysis (Sher, 1977). They asked for investigation of the relationship between reorganization and the costs of schools, the effectiveness of the educational process, equality of opportunity, and the well-being of the community.

Although McIntire (1989) noted an increase in the quantity of high quality rural education research, he also noted the increase in rural education research of poor quality. Barker (1985) discussed the limited value of rural education research because of insufficient definition of "rural," lack of diversity, disproportionate attention to large schools, and the absence prior to 1983 of a national database which included small schools.

Several articles suggested the need for research on optimum size of schools, rural-urban differences in student achievement, and higher education success. Studies have been performed in these areas, but the results are conflicting, confusing, and limited. The research on Montana rural education also appears to be limited. Several contributions to the literature discuss rural education, but few are research based.

In summary, research in rural education in the United States and Montana is incomplete, at best. Rural education committees, organizations, and research groups are outspoken about the lack of attention to rural education research needs, e.g., the National Rural Center in 1981, the McREL Rural Education Project and the Committee on Rural Education in 1985, and the National Rural Education Association in 1986. Individual researchers and the chairman of a national committee on rural education have called for research-based explanations for the differences between urban and rural schools, and comparative studies using developed databases (Barker & Stephens, 1985; Carlson, 1989; McIntire, 1989; Pucciano, 1987). Other studies noted the lack of research to distinguish between the effects of smallness, ruralness, distance, and isolation (Barker, 1985; Marshall, 1986; Pucciano, 1987). Sher (1977) and Barker (1985) joined others in citing the need for research that explores the finances and costs associated with school size.

The call resounds for educational research to expand the understanding of rural education. This paper will contribute to the body of rural and small school research by examining a large statewide database in search of differences or similarities in the financial and economic patterns of rural and small schools.

Statement of the Problem

The problem of this study was to determine relationships between the community size and instructional level of public school districts and selected school district fiscal and economic characteristics.

Significance of the Study

Rural schools still play a significant role in American education, although the United States has become an urban society. The National Center for Education Statistics (NCES) found that in 1989 over 38% of American public school students attended schools in localities classified as small town or rural: 22% in small towns, and 16% in rural locations (NCES, 1989). Despite the fact that nearly two-fifths of the nation's students are educated in small or rural schools, research on those schools is unavailable, incomplete, or inconclusive in nearly all cases, as pointed out earlier in this chapter. This study contributes to the rural and small school knowledge base through analysis of school district data in a distinctly rural state.

Montana is a living laboratory in which to build a small and rural school information base. In 1989, the NCES analysis of state data indicated the general population density of Montana was 5.54 and the public school student population density was 1.05 per square mile; only Alaska and Wyoming had fewer students per square mile than Montana (0.18 and 1.01,

respectively). Montana is extremely rural; in the 1987-88 school year, 76% of its public school students were enrolled in schools in small towns and rural settings, twice the national rate of 38%. Thirty-seven percent of Montana's students were in schools in small towns, and 39% were in rural locations (NCES, 1989). NCES identified the community-size location of the schools as well as the location of the students; approximately 90% of the Montana public schools were in locations classified as small town and rural, much higher than the national figure of 51%.

In addition to contributing to an understanding of Montana school districts, the value of this research will be enhanced if the findings can be compared with other states. The use of community size groupings, as defined and utilized by NCES, facilitates the application of this study to other states.

Fiscal and economic characteristics were observed separately for elementary and secondary levels in this study, because elementary and high school districts budget and report as separate entities in Montana.

Although Montana school districts are overwhelmingly small and rural, the number of districts and the diversity of district characteristics contribute to the usefulness of this study. Montana has more districts than most states where districts combine elementary and secondary levels into K-12 districts. In 1980, Montana ranked tenth among the states in the number of school districts with a total of 563 (Burrup & Brimley, 1982), and by 1989 still had

545 districts. Casual observation of the fiscal 1989 school district data (Montana OPI, 1989) easily identified district features that exhibit wide diversity. The elementary district enrollment ranged from 1 to 10,677, and the high school district enrollment ranged from 14 to 4,749 students. The taxable valuation of the school districts ranged from a low of $103 per student to a high of more than $5.8 million per student.

The impact of impending change in public schools cannot be assessed without a base from which to compare or anticipate results. This study examined Montana public school data from the 1988-89 school year, prior to the implementation of significant changes in Montana schools, thus taking advantage of a window of opportunity for future research. Some of the post-fiscal 1989 changes include:

(1) A new public school foundation program implemented in school year 1990-91, which increased state school foundation program schedules for elementary school districts in funding categories 1 through 7 by 17.3%; for elementary category 8 by 27.9%, and all high school categories by 26.2% (Montana OPI, 1989).

(2) Guaranteed tax base supplements which were available beginning in 1990-91 to school districts with below-average taxable valuation.

(3) Implementation of new accounting standards and reporting requirements which were implemented in 1990-91.

(4) The opportunity for elementary and high school districts with the same boundaries to combine into a K-12 district, which will take effect for school year 1991-92.

(5) Reporting requirements for student achievement scores, grades 3, 8, and 11, which became effective for all public schools in Montana in July of 1991.

(6) Followup studies on dropouts, transfers, and graduates which are required by the accreditation standards for all schools in 1992-93.

(7) Revised accreditation standards for schools which include new qualitative curriculum area goals for student achievement to be phased in through the year 2000.

(8) Revised required courses for high school graduation, which will be in effect in the spring of 1993.

(9) An education telecommunications network, which will be developed and implemented from 1991 through 1993.

Research on the effects of the changes listed above may add significantly to the rural education information base. This study establishes a platform from which the impact of the changes may be observed.

The demand is increasing for research and data on school district fiscal characteristics. Lawsuits filed across the nation are challenging funding systems as unequitable, citing wide disparities in local wealth and

expenditures. In 1989, lawsuits were active or court orders were pending in 10 states, Montana being one of them (Mitang, 1989).

The 1989 Montana Legislature restructured the school funding system in response to a state supreme court ruling declaring unconstitutional the method of funding public school education. Following the 1991 Montana Legislative Session, which provided no additional funding to public schools and no legislation to address the remaining inequities, the plaintiffs in the 1985 lawsuit announced their intention to file a new lawsuit. Both the plaintiffs and defendants in the Montana underfunded lawsuit utilized the same database that provided data for this study. Therefore, the results of this study may complement the analyses of the parties in subsequent lawsuits.

As policymakers focus on the areas for school equalization which the lawsuits and the courts have targeted, factions develop. Rural/urban as well as wealthy/poor issues and conflicts arise. A coalition of rural Montana districts has contracted with the Northwest Regional Education Laboratory (NWREL) to examine the rural/urban cost and program differences. The data used in this study also are being examined by the NWREL researchers. The results of this study, in conjunction with the NWREL and lawsuit research, will yield a broader view of the data than could be obtained in one study. This study may provide a basis for examining school district finances and equalization issues using groupings of districts with unique fiscal

patterns. Since Montana is extremely rural, results of this study may also provide guidance in other rural settings.

General Questions to Be Answered

The information obtained from this study will be used to answer the following general questions:

(1) Do rural school districts share characteristics that differentiate them from other school districts? What characteristics are shared? What characteristics are different?

(2) Does the degree of local wealth affect local taxpayer effort to support schools?

(3) Does local wealth contribute to expenditure differences between school districts?

(4) What factors influence the level of instructional expenditures, overhead expenditures, teachers' salaries, and local taxpayer support of schools?

(5) Can changes be predicted for fiscal characteristics of school districts based on other financial modifications?

Research Questions

This study was designed to answer the following questions to determine the relationship between the community size of elementary and high school

districts in Montana and selected school district fiscal and economic characteristics.

(1) Is there a significant difference in per student instructional expenditures between school districts classified by community size?

(2) Is there a significant difference in per student overhead expenditures between school districts classified by community size?

(3) Is there a significant difference in the average teacher salary between school districts classified by community size?

(4) Is there a significant difference in taxpayer capacity between school districts classified by community size?

(5) Is there a significant difference in taxpayer effort between school districts classified by community size?

In addition, this study was designed to examine the relationships between selected economic and fiscal characteristics of school districts and answer the following questions:

(6) What is the relationship of taxpayer capacity, taxpayer effort, overhead expenditures, average teacher salary, community size, and funding category to instructional expenditures?

(7) What is the relationship of instructional expenditures, taxpayer capacity, taxpayer effort, average teacher salary, school district community size, and funding category to overhead expenditures?

(8) What is the relationship of taxpayer capacity, taxpayer effort, instructional expenditures, overhead expenditures, community size, and funding category to average teacher salary?

(9) What is the relationship of taxpayer effort, overhead expenditures, average teacher salary, community size, funding category, and instructional expenditures to taxpayer capacity?

(10) What is the relationship of taxpayer capacity, instructional expenditures, overhead expenditures, average teacher salary, school district community size, and funding category to taxpayer effort?

Limitations of the Study

The study was limited in that expenditures, revenues, costs, salary, and pupil data were used as reported to the Montana Office of Public Instruction. No further verification of the data was made.

Definition of Terms

(1) Allowable transportation costs: Those costs of transportation approved by OPI which meet the requirements set out in statute and administrative rules, and provide a statutory rate of reimbursement per mile.

(2) Average-number-belonging (ANB): A student membership number based on student attendance and absence data for 180 pupil-instruction days and 7 pupil-instruction-related days. Regularly enrolled students count

for ANB, but full-time special education students do not. The ANB is multiplied times the foundation schedule amounts in statute to determine the foundation program funding for each school district.

(3) Average teacher salary: The mathematical average of the reported full-time teachers' salaries for each district.

(4) Capital outlay: Includes the costs for construction of facilities and major equipment.

(5) Comprehensive Insurance Fund 16: The fund in which district expenditures for comprehensive insurance costs and workmen's compensation costs are reported, and are considered an overhead cost to the district.

(6) Elementary school district: The state entity responsible for providing instructional programs for pre-kindergarten through grade 8.

(7) Enrollment: The number of students enrolled in a school district on October 1st of a school year.

(8) Extreme rural: A subcategory of the U.S. Census Bureau rural category, not considered isolated, determined for this study, which includes districts of fewer than 200 elementary and 100 high school students.

(9) Extreme rural isolated: A subcategory of the U.S. Census Bureau rural category, determined for this study, including school districts of fewer than 200 elementary and 100 high school students, which are considered isolated because the schools are located 20 or more miles from another district's school.

(10) Foundation program: The primary vehicle for providing state funding to public schools. The general fund is financed by county equalization funds, state equalization aid, and appropriations for special education.

(11) Foundation program schedules: The financial schedule amounts provided in statute which are multiplied times the ANB of a district to determine the amount of foundation program payments to each district. The rates are scaled so that smaller schools receive more per ANB than larger schools, and high schools receive more than elementary schools.

(12) Funding category: A classification of school districts, based on the average-number-belonging (ANB), which determines the amount of foundation program funding available for a school district.

(13) General Fund 01: The fund where general maintenance and operational costs of a school district are reported, and state foundation program payments are deposited.

(14) Guaranteed tax base (GTB): The state equalization assistance available to districts and counties with less than average taxable valuation per ANB.

(15) High school district: The state entity responsible for providing instructional programs for grades 9 through 12.

(16) Instructional expenditures: Includes school district costs for instructional activities which were reported in the fiscal 1989 end-of-year trustees report for the General Fund 01 and the Retirement Fund 14.

The instructional expenditures considered in this study included the expenditures reported by the function codes on school district trustees' fiscal 1989 reports as instruction 10, educational media 22, supportive services-instructional 20, student support 21, or student activities 34 and 35. Expenditures for capital outlay, principal and debt, judgments, and operating transfers were excluded (object codes 700 through 999).

The Retirement Fund 14 costs included employers' required benefit contributions for social security, teachers retirement and public employees retirement. These costs were not coded to specific programs, so for purposes of this study, the costs were prorated as percentages of the salaries reported in the instruction and overhead expenditures categories. If instructional salaries represented 70% of the total of the General Fund 01 object codes 100 to 199, then 70% of the retirement costs were attributed to instructional expenditures.

(17) Instructional expenditures excluding salaries: Includes the school district costs for instructional activities, excluding salary costs, which were reported in the fiscal 1989 end-of-year trustees report for the General Fund 01. The instructional expenditures considered in this study included the expenditures reported by the function codes on school district trustees' fiscal 1989 reports as instruction 10, educational media 22, supportive services-instructional 20, student support 21, or student activities 34 and 35. Object codes 100 through 199,

personal service expenditures, were excluded. Also excluded were object codes 700 through 999, the expenditure codes for capital outlay, principal and debt, judgments, and operating transfers.

(18) Instructional levels: The grade levels of the instructional program, either elementary (prekindergarten through grade 5) or high school (grades 9 through 12).

(19) Large city: The U.S. Census Bureau category for a central city of a standard metropolitan statistical area (SMSA) with 400,000 or more population.

(20) Large town: The U.S. Census Bureau category for an area that is not in an SMSA but has 25,000 or more population.

(21) Levy amount: The amount of revenue raised by district taxpayers for funds 01, 14, and 16, and assessed against local taxable valuation.

(22) Mid-size city: The U.S. Census Bureau category for a central city of an SMSA with populations less than 400,000.

(23) Overhead expenditures: Includes school district costs of providing a facility and administration for the instructional program. The overhead expenditures considered in this study were reported in the fiscal 1989 end-of-year trustees' report for the General Fund 01, the Retirement Fund 14, and the Comprehensive Insurance Fund 16. The specific expenditures incorporated into the study were reported in fund 01 as function codes for general administrative services 23, building

administrative services 24, operational and maintenance services 26. Expenditures for capital outlay, principal and debt, judgments, and operating transfers were excluded (object codes 700 through 999).

The Retirement Fund 14 costs included employers' required benefit contributions for social security, teachers retirement and public employees retirement. These costs were not coded to specific programs, so for purposes of this study, the costs were prorated as percentages of the salaries reported in the instruction and overhead expenditures categories. If overhead salaries represented 30% of the total of the General Fund 01 object codes 100 to 199, then 30% of the retirement costs were attributed to overhead expenditures.

The Comprehensive Insurance Fund 16 provides for the costs of school district comprehensive insurance coverage. The costs of this fund were considered as administrative overhead costs for the district and the fund total was included as overhead expenditures.

(24) Public school district: The school administrative unit with geographic boundaries which determine the attendance and property tax base for the schools of the district. In Montana the elementary and high school districts are separate.

(25) Retirement Fund 14: Includes costs of employers' required benefit contributions for social security, teachers retirement and public employees retirement.

(26) Rural: The U.S. Census Bureau category for an area with a population of 2,500 inhabitants or less.

(27) School locale classification: Groups school districts into U.S. Census Bureau categories based on the size of the community where the schools are located.

(28) Small rural: A subcategory of the U.S. Census Bureau rural category, determined for this study, which includes those districts not classified as extreme rural or extreme rural isolated.

(29) Small town: A U.S. Census Bureau category for an area with less than 25,000 and more than 2,500 population.

(30) State equalization aid: Includes the moneys deposited in a state special revenue fund to support the foundation program.

(31) Taxable valuation: The assessed property value of a school district against which mill levies are assessed for purposes of raising revenue. The value of one mill is 0.001 of the taxable valuation.

(32) Taxpayer capacity: Reflects the ability of taxpayers to raise local funds, measured by district taxable valuation divided by the student enrollment of the district.

(33) Taxpayer effort: Reflects the application of taxpayer ability to raise local funds to supplement the other revenue sources for funds 01, 14, and 16, measured by the levy amount divided by the student enrollment of the district.

(34) Urban fringe of large city: The U.S. Census Bureau category for an outlying area within the SMSA of the large city defined by the Census Bureau.

(35) Urban fringe of mid-size city: The U.S. Census Bureau category for an outlying area within the SMSA of the mid-size city defined by the Census Bureau.

CHAPTER 2

REVIEW OF THE LITERATURE

Substantial testimony is available indicating that research on small and rural schools is deficient, as pointed out in the first chapter of this study. Even more evident is the lack of investigation of fiscal and economic features of schools in relationship to size, instructional level, or community. A review of the literature uncovers some of the reasons the research is sparse, and also points out the needs of the near future.

Definition of Rural

The literature indicates that consensus has not been reached as to the definition of "rural," making it very difficult to compare studies or compile data. Rios (1988) discussed the need for a definition of "rural" in order to manipulate, sort and compare qualitative and quantitative data. In 1983, the United States Department of Education Committee on Rural Education compiled a list of definitions of "rural" as used by federal agencies in search of a definition for the Department's statement. The Committee members discovered 31 different definitions. Their choice was a footnote:

> As defined in the 1980 census, the rural population comprises all persons living outside urbanized areas in the open country or in communities with less than 2500 inhabitants. It also includes those living in areas of extended cities with a population density of less than 1000 inhabitants per square mile. (Committee on Rural Education, 1983, p. 1)

The National Rural and Small School Consortium (1986) also recognized the need to acknowledge common definitions for rural and small schools. The Consortium made the following distinctions:

> Rural School District: A district is considered rural when the number of inhabitants is fewer than 150 per square mile, or when it is located in a county where 60% or more of the population live in communities of 5,000 or fewer. Operationally, most rural school districts will have an . . . enrollment of 2,000 or fewer.
>
> Small School District: A school district is small if fewer than 2,000 students are enrolled in grades K-8 or K-12. A small school district may also house small schools. A small elementary school enrolls fewer than 350 students. A secondary school having an enrollment of 750 or fewer in any combination of grades 7-12 is considered small. A very small high school has fewer than 350 students. (National Small and Rural School Consortium, 1986, p. 2)

If the Consortium's definitions of rural and small school districts were applied to Montana schools in 1989, the "enrollment of 2,000 or fewer" would include 526 of the 537 school districts, or 98%. Additionally, 139 of the 170 high schools (82%) would be considered "very small" high schools.

The U.S. Census Bureau, in a cooperative venture with the U.S. Department of Education, assigned all public schools in the United States to one of seven locale settings. The categories were intended to describe the size and metropolitan status of the place where the school was located. Rural

was defined as "a place with less than 2,500 people or a place having a ZIP Code designated rural by Census" (NCES, 1989, p. 5).

Contrary to general belief, rural does not equate with agricultural. Nachtigal (1988) pointed out that only 29% of non-metropolitan areas have an agricultural economic base. He found rural areas to be dependent on a variety of economic bases: mining, recreation, lumbering, manufacturing, and retirement. Cousins (1983) used economic bases to group rural districts in Colorado. His groupings ranged from predominantly agricultural to recreational, ranching, railroad, commuter, and energy development rural.

Cultural diversity also abounds in rural America. In the Midwest, Anglo ethnic groups dominate; Hispanics are the growing majority in the Southwest. Blacks are dominant in the Southeast; Native Americans present chronic pockets of rural poverty in several areas (Nachtigal, 1988).

In an attempt to focus rural research efforts, Hubel (1986) surveyed rural school superintendents to determine which NREA research area data would be most useful for them. They showed the least interest in developing a taxonomy of rural schools, i.e., location, characteristics, description of rural. Evidently they know where they are even if the researchers do not.

In the past, school data gathered at a national level were compared and compiled primarily utilizing geographic region or relative wealth measures. In 1989, the NCES developed school locale clusters for comparison of statistics and programs. States were clustered on the basis of the

predominant community size of schools within each state. Montana was grouped in the Town-rural Cluster which included 10 other states: Arkansas, Idaho, Kentucky, Maine, Mississippi, New Hampshire, South Dakota, Vermont, West Virginia, and Wyoming. Using the U.S. Census Bureau definition of rural, the average rural student membership in this grouping of states was 32.8%; in Montana it was 39% (NCES, 1989).

The definitions of rural vary widely, but the common elements of rurality appear to be sparse population and distance.

Optimum School Size

Confusion also exists concerning optimum school size. In 1980, there were 15,766 school districts in the 50 states. The number of districts ranged from 1,101 in Texas to 1 in Hawaii. No relationship is apparent between population, size, and number of school districts. For example, New York had 46 school districts and Wyoming 49; Montana 563 and Alaska 52; Illinois 1,012 and Indiana 305; Nebraska 1,037 and Nevada 17 (Burrup & Brimley, 1982). A common size for school districts is not discernible.

In Montana in school year 1988-89, only 80 of 163 high school districts (49%) had enrollments over 100; only 97 of 382 elementary school districts (25%) had enrollments over 200 (Montana OPI, 1989). Although research on school size is lacking, Montana statutes penalize very small elementary

districts that are considered non-isolated by requiring local districts to provide half the revenue for the state aid program.

A recent Montana study recommended an optimum high school size. In 1982, the Montana Board of Public Education proposed that high schools with fewer than 100 students be required either to locally finance a portion of state aid if the district were not isolated or to consolidate with another high school. The study included no rationale for selection of 100 as an optimum high school size, no analysis of high school costs, no survey of available facilities, and no analysis of related transportation costs.

In another Montana study, Ardys Clarke (1985) focused on the relationship between the size of Montana high schools and college success. Although she did not recommend a school size, she also presented no rationale for the size categories that were used to compare subsequent success in college.

In an evaluation of a North Carolina recommendation for small schools, Sher and Schaller (1986) observed that when many school researchers compile data, school size is often mixed with school district size, which may be very different. Sher and Schaller also referred to studies which suggested a variety of optimum size schools from "as large" as 1,000 or 1,500 to "no less than" 5,000 to an optimum of 10,000. The title of their study, "Heavy Meddle," leaves little doubt as to their sentiment about the North Carolina recommendation.

In 1975, the Vermont State Department of Education ordered consolidation of school districts into 56 supervisory unions. Stuart Rosenfeld (Sher, 1977) contended that no serious attempt was made to accumulate authoritative evidence as a basis for the consolidation decision. In fact, in the 60 years prior to the Vermont consolidation, various task forces had recommended the optimum number of districts as 18 districts, 25 districts, 12 districts, and 32 districts (twice). Rosenfeld suggested that the issues of consolidation are comparable to unanimous history, analogous to Columbus' discovery of America.

The 1971 version of the *Encyclopaedia of Education* illustrated the acceptance of a "common wisdom" related to optimum school size. Reorganization of small districts into large ones was supported with the statement that small schools couldn't supply the education Americans want for their children, and clearly indicated that large schools have higher quality programs than smaller ones. The *Encyclopaedia* observed that an effective administrative unit should have at least 3,500 students, but would be more economical with 20,000 to 30,000 students.

Optimum school size is often debated but the premise that bigger is better is rarely disputed. Although research on optimum size may consider economy of scale of larger schools, it rarely factors in the costs of transporting students further distances or of expanding facilities to accommodate more students. Equalization of tax bases has been the basis for determining

school district size in several states. However, Sher (1977) indicated that in states with few districts, the wealth disparities are as wide as in states with many districts.

Although studies are inconsistent, some general threads of information can be acknowledged: the smaller the school, the higher the cost per pupil and the fewer the program offerings. Arguments for optimum size stress improved education programs, yet research on achievement of students in small schools is limited and conflicting.

For years, optimum size proponents continued to pursue consolidation efforts without supportive data. By the 1980's Hobbs, Hefferman, and Tweeten (1988) felt the consolidation movement slowed because the excessively small schools had already been consolidated or the rural opposition had been effective. However, consolidation efforts are likely to be revived as costs increase, revenue continues to shrink, rural student numbers decline, and pressures to improve schooling continue.

School District Isolation

The 1971 *Encyclopaedia of Education* surmised that rural isolation had declined. Between 1922 and 1960, paved roads increased by over 500%, leading to the conclusion that supporting poor one-room elementary and small high schools permitted "a continuation of inadequate education, which reorganization would have cured" (p. 591).

Another perspective on isolation was presented by Gjelten (1978). He suggested that isolation in this era is greater than the isolation of years ago. At one time people in the United States were grouped into small communities and the sense of heritage was local; for most Americans the heritage has become broader, either regional or national. As the broader culture becomes more centralized, more urbanized, and more important to daily lives, the separation from that culture becomes more significant. Gjelten concluded that people living in remote rural communities are more isolated today than in the past because there is more from which to be isolated.

In a search for common definitions, the National Rural and Small School Consortium (1986) drafted the following definition of an isolated school:

> Remote/Isolated School: A school district or school building meeting either of the definitions of small or rural schools in a location 100 or more miles from the nearest non-small school district is considered remote/isolated. (p. 2)

Any recommendation or study involving isolation is restricted by the myriad definitions of "small" and "isolated." Some agreement must be reached as to an optimum sized district or an isolating distance before determining that it is of inefficient size or too small. Bass (1990) and Verstegen (1990) both discussed the complexity of determining isolation and of the unique circumstances and needs of each state.

Bass (1990) reviewed a variety of criteria for defining isolation. Most of the definitions use density of population or distance to the nearest neighboring school. Montana's distance criterion for isolation of school districts (as

found in *Montana Codes Annotated,* section 20-9-305, MCA, and Administrative Rules of Montana 10.30.102) is for a school to be more than 20 passable miles from "another operating school(s) with room to accommodate applicants' students (Montana, ARM, 1990)." Comprehensive rules for Montana school isolation status are presented in Appendix B. Schools in the smallest funding categories (<10 elementary and <25 high school) must apply for isolation status, and elementary districts are penalized for non-isolation status by being required to provide, at the local level, half the revenue for the state foundation program. No penalty exists for small high schools that are non-isolated. In the 1989-90 school year, 50 of the 58 elementary districts with fewer than 10 students were considered isolated, as were 2 of the 5 high school districts with fewer than 25 students (Nielson, 1990).

Dunne and Carlsen (1981) and Davis (1987) found that teachers' concerns about isolation do not refer to the school district itself. Nearly 80% of the teachers in rural or small schools grew up in rural or low population areas, and prefer teaching in those settings. However, they feel a personal and a professional isolation.

Marshall (1986) pointed out the lack of research on the effects of isolation on school district programs, and the literature concurs with his observation. A review of the research on isolation indicates some examination of the effect of personal and professional isolation and the difficulties of

defining terms, but rarely involves the impact of isolation on learning, programs, and expenditures.

Teacher Salaries

Nachtigal (1988), commenting on an NEA survey, noted the increasing disparity in teacher salaries between rural and urban districts. Some studies indicated teacher salaries as predictors of student achievement level. When Biniaminov and Glasman (1983) attempted to build a model showing the effect of input variables on public school student achievement, most results were inconsistent and divergent. The only characteristic that demonstrated a consistent positive effect on student achievement was higher annual teacher salaries. If the salaries of teachers in rural districts are low and getting lower, as indicated by Nachtigal and the NEA surveys, a relationship between teacher salary and student achievement might be expected in other studies.

A disparity also exists between teachers' salaries by instructional levels. In the 1988-89 school year, the average statewide Montana teacher's salary was $24,421 (Montana OPI, 1989), but was $23,823 for elementary teachers and $25,707 for high school teachers, a difference of $1,884 (7.9%). The Montana differences are slightly lower than national differences. The average 1988-89 public school teacher's salary nationally was $29,563 (National Education Association, 1991), and the difference between

elementary and high school salaries was $1,222 (4.2%). The National Education Association (NEA) has pointed out that statewide averages hide as much as they reveal at the state level, and that differences in salary levels between elementary and secondary teachers result from factors that vary from state to state and district to district, adding that "it should not be assumed that elementary classroom teachers are paid more or less than secondary teachers strictly on the basis of what grade level they teach" (NEA, 1991, p. 18). Traditionally, female teachers have done more "stopping out" of the teaching force for family reasons, and when they return to the workforce they may be several steps down the pay scale from male counterparts who have not interrupted their teaching careers.

Montana's teachers are predominantly female. At the elementary level, 75% of the teachers are female, although only 37% of the high school teachers are female (Montana OPI, 1989). Those percentages are lower than national data reported by NEA (1990) showing 85% of elementary and 53% of high school teachers are female.

The American Federation of Labor (Nelson, 1989) ranked the 1988-89 average salary of Montana teachers as 41st in the nation. When adjusted for cost-of-living index, Montana ranked 36th. However, when compared to 1988 per capita personal income, the average Montana teacher salary ranking moved to 14th in the nation. Finally, when compared to 1988 annual earnings in the private sector, the Montana teacher's salary jumped all the way to 8th in the nation.

Salaries and benefits represent a major portion of school district expenditures as pointed out by Dunne and Carlsen (1981) and Jewell (1990). Jewell also found that more than 63% of the variation in average expenditures is accounted for by variations in average teachers' salaries, but was unsure which factor drove which, i.e., salary level or available resources.

School District Financial Characteristics

Jewell (1990) identified fiscal variables within 51 systems of public education in the United States — the 50 states and the District of Columbia. He concluded that only a few of the variables have truly profound effects upon the allocation of resources within public schools. Those included per pupil expenditures, per capita income, taxpayer effort, and average teachers' salaries. His study indicated that the major variations in per pupil expenditures were due in large part to two factors. The ability to pay accounted for more than 60% of the variation, and when taxpayer effort was added to the equation, 80% of the variation could be explained.

Public schools are dependent on property taxes. Nachtigal (1988) reported school revenue as basically derived from state aid and local property taxes (50.9% and 30.2%, respectively). The state of Montana exceeded those levels in 1988; school district revenue was approximately 54.3% state aid and 42.0% local property taxes (Montana OPI, 1989). Montana had no sales tax and relied heavily on property and mineral

revenues; Montana property tax revenue per capita exceeded the U.S. average by 55%, ranking 5th in the nation in 1988 (Advisory Commission on Intergovernmental Relations, 1989).

The Advisory Commission on Intergovernmental Relations (ACIR, 1989) provided biennial reports on fiscal capacity and effort of each state to quantify the relative fiscal positions of each state. The Commission defined fiscal capacity as the "relative per capita amounts of revenue states would raise if they used representative tax and revenue systems," and fiscal effort as "the ratio of actual revenues to estimated capacity" (p. 3).

Fiscal capacity measures the potential for raising revenue; fiscal effort measures the degree to which the fiscal capacity is actually utilized. The measure of effort reflects a philosophy regarding the need for the services and an attitude regarding responsibility. Research Associates of Washington (1988) also provide periodic reports on state financing as a relative comparison with other states. They concentrate on state profiles of higher education funding, and include in their model the independent factors of state tax capacity and tax effort, derived from tax base and revenue data.

Approximately 85% of 1988-89 Montana public school revenue, including both the local school levies and the state foundation program, was obtained from property taxes (Montana OPI, 1989). A major portion of that revenue was used to fund the state school equalization program. In the 1985-86 school year local revenues financed nearly 45% of the Montana public school general fund

budgets (*Helena Elementary School District et al. v. State of Montana et al.*, 1989), a figure presiding Judge Loble found inequitable because of a wide disparity in taxpayer ability to support education.

Lawsuits filed across the nation are challenging funding systems as inequitable, citing wide disparities in local wealth and expenditures. In 1989, lawsuits were active or court orders were pending in Kentucky, New Jersey, Montana, North Dakota, Connecticut, Alaska, Minnesota, Oregon, Tennessee, and Texas (Mitang, 1989). The Montana underfunded schools lawsuit was filed in 1985, and in February of 1989, the Montana Supreme Court upheld a lower court ruling which found the Montana system of funding public schools to be inequitable and therefore unconstitutional (*Helena Elementary School District et al. v. State of Montana et al.*, 1989). After long and difficult deliberation, and a special legislative session in 1989, a new funding system was devised for Montana. The restructured foundation program (including enlarged permissive levies guaranteed tax base aid, and revised tax policies) was designed to provide a more equitable system of funding Montana public schools.

Legal briefs filed in conjunction with Montana's school funding lawsuit (*Helena Elementary School District et al. v. State of Montana et al.*, 1989) cited disparities in per student expenditures and taxpayer wealth. Judge Loble, in his opinion and order, addressed the equalization of school district costs associated with general operations and maintenance, retirement, transportation, and construction of school facilities.

Financial resources are but one indicator of public school health. Kaagan and Coley (1989) pointed to fiscal resources as one of three primary input components in education; the other two are student and teacher characteristics. Policy decisions cannot control for the student and teacher characteristics, but can direct financial resources. Those researchers considered it essential that strong relationships be established among the input, process, and output factors.

> The use of any statistic for policy purposes carries an implicit model of the dynamics of a system; it is better to make the model explicit and increase understanding of the statistic's significance. Ordering and examining relationships are critical if the indicator system is to reveal what leads to success or failure. (Kaagan & Coley, 1989, p. 9)

The effects of the recession in the mid-1980s and the drop in energy prices were reported to have severely impacted assessed property valuation, particularly in the energy-rich Rocky Mountain States (Richter, 1986). The impact was particularly dramatic in states with heavy reliance on the property tax. The Advisory Commission on Intergovernmental Relations (1989, p. 8) listed 10 states with the largest decrease in fiscal capacity between 1982 and 1986: Alaska, Wyoming, Oklahoma, Louisiana, Texas, Montana, North Dakota, West Virginia, Colorado, and New Mexico. The result for school districts in those states has been a shrinking tax base. The fiscal stress experienced at the state level aggravates the stress felt by many school districts in those states. Only two of the states with the greatest decrease in capacity, Montana and Wyoming, are in the most rural school district cluster as classified by NCES in 1989.

The farm recession resulted in population losses (WICHE, 1989), thus reducing the size of already small rural schools. In fiscal 1988, Montana had four high school districts enrolling fewer than 24 students in the smallest funding category. By 1989, there were eight high schools in the smallest category (Montana OPI, 1989). This loss of "critical mass" is cited as reducing schools below adequate program size (Richter, 1986), whatever "adequate" is.

Although the fiscal features of education have been compared, correlated, weighed, and ranked to evaluate schooling, very little of the measurement has included small or rural schools. Even the U.S. Department of Education did not compile data on schools smaller than 300 students until 1983 (Ellis, 1986). Researchers tend to focus on larger settings, and those who are trained in educational research are generally oriented to urban/suburban models (Dunne & Carlsen, 1981).

Burrup and Brimley (1982) suggested that traditional arguments rather than research were the basis for assuming the greater economy of operation of larger school districts. Nevertheless, they stated that "most informed students of educational administration recognize some relation between the costs of education and the organizational pattern of the schools and school districts the state operates" (p. 103). They did not cite research which led them to that conclusion.

CHAPTER 3

DESIGN OF THE STUDY

This study was designed to determine if groupings of Montana school districts differed significantly, based on selected fiscal and economic characteristics. The study investigated the differences or relationships which exist between the Montana public elementary and high school districts located in different community-size settings and the quantifiable variables of school district expenditures for instruction, overhead expenditures, average teacher salary, taxpayer capacity, taxpayer effort, and funding category.

This research provides information about school districts in an extremely rural state, information which may be referenced for future Montana education studies, may be applied to rural schools in other states, or may permit prediction when the fiscal and economic characteristics undergo change. Even more significant is the contribution to a research area which has been considered woefully inadequate by major researchers.

Data

The population for this study was comprised of the 537 operating public school districts in Montana in the 1988-89 school year. An additional nine

elementary districts were non-operating and were not included. This study was designed to contribute to research on rural and small school education; therefore, statistical techniques were applied for analysis treating this population as a sample of small and rural schools in the United States. In the 1987-88 school year, Montana schools represented from 1.0 to 2.0% of the schools in the nation in each of the categories of rural, small town, and large town (NCES, 1989; Montana OPI, 1989).

The 537 Montana school districts are organized as either elementary or high school districts and were studied in those separate categories. The districts were also grouped by community size using a classification developed from U.S. Census Bureau local data by the National Center for Education Statistics (NCES) to identify individual school locations. NCES and the U.S. Census Bureau describe the size and metropolitan status of public elementary and secondary schools in the United States using seven locale designations: (1) large city, central city of a standard metropolitan statistical area (SMSA) with 400,000 or more population; (2) mid-size city, central city of an SMSA with a population less than 400,000; (3) urban fringe of large city, within the SMSA of the large city defined by the Census Bureau; (4) urban fringe of mid-size city, within the SMSA of the mid-size city defined by the Census Bureau; (5) large town, not in an SMSA but has 25,000 or more population; (6) small town, less than 25,000 and more than 2,500 population; and (7) rural, a population of 2,500 inhabitants or less.

The 1989 NCES report indicated that the school buildings in Montana conformed to five categories: (1) mid-size city (19.84%), (2) urban fringe of mid-size city (0.75%), (3) large town (3.70%), (4) small town (36.90%), and (5) rural (38.81%).

To provide a more precise examination of rural education factors for this study, the "rural" districts were divided into three subcategories: (1) extreme rural isolated, schools with fewer than 200 elementary and 100 high school students separated from other schools by 20 miles or more; (2) extreme rural, schools with fewer than 200 elementary and 100 high school students which do not fit into the extreme rural isolated category; and (3) small rural, schools in the rural locale category with 200 or more elementary and 100 or more high school students.

This study used a Montana statutory criteria of 20 miles or more from another school to define isolation of school districts in the extreme rural classification. Montana statutes require application for isolation status for the smallest funding categories of schools (<10 elementary and <25 high school). Appendix B provides the complete rules for school isolation status in Montana. Information on distances between extreme rural schools was obtained from county superintendents of schools, district superintendents, a Legislative Council study (Merrill, 1986), the 1989 OPI database, and maps of Montana. Table 1 lists the community size groupings and a description of each category.

Table 1. Community size location categories for Montana public school districts.

Category	Community Size	Description
1	Mid-size city	Central city with population less than 400,000.
2	Large town	Not a central city, but population of 25,000 or more.
3	Small town	Area with population less than 25,000 and more than 2,500.
4	Small rural	Less than 2,500 population, not extreme rural or extreme rural isolated.
5	Extreme rural	Less than 2,500 population, and district enrollment less than 200 elementary and 100 high school, and not isolated.
6	Extreme rural isolated	Less than 2,500 population, and district enrollment less than 200 elementary or 100 high school, that are separated from schools in another district by 20 miles or more.

(Sources: NCES, 1989; Montana OPI, 1989)

The instructional level categories for Montana school districts describe the program offerings of the districts. School districts are organized as either: (1) elementary districts, providing pre-kindergarten through grade 8 programs; or (2) high school districts, providing programs for grades 9 through 12.

School districts were also grouped into funding categories, which is one of the fiscal characteristics in this study. The funding categories were based on the state foundation program schedules set out in statute (*Montana Codes Annotated,* 1989). Classifying Montana school districts by funding category provides for correlation of data with prior studies, school equity

lawsuit data comparisons, and information concerning methods of grouping school districts. Montana statutes establish the categories based on a student enrollment equivalency, known as the ANB, or average-number-belonging (MCA, 1989, sections 20-9-318, 20-9-319). Table 2 lists the funding categories.

Table 2. Montana foundation program funding categories for elementary and high school district ANB.

Method of Funding	ANB Per Funding Category			
	Elementary (K-8)		High School (9-12)	
	Category No.	ANB	Category No.	ANB
base funding amount	1	1 - 9	9	1 - 24
amount per ANB	2	10 - 17	10	25 - 40
amount per ANB	3	14 - 17	11	41 - 100
amount per ANB	4	18 - 25	12	101 - 200
amount per ANB	5	18 - 50	13	201 - 300
amount per ANB	6	41 - 100	14	301 - 600
amount per ANB	7	101 - 300	15	601+
amount per ANB	8	301+		

Examination of the categories listed in Table 2 shows that overlap occurs between elementary categories 2 and 6; categories 2 and 3 include districts with 14 to 17 ANB, categories 4 and 5 overlap with 18 to 25 ANB, and categories 5 and 6 overlap with 41 to 50 ANB. Within those categories,

the request for an aide, a second teacher or a third teacher may provide differing funding for the same size school.

Table 2 also indicates that the funding scale levels out at 301 elementary students, although the largest Montana elementary district enrolls more than 10,000 students. High school funding flattens out at an enrollment level twice that of the elementary, 601 students, although the largest high school district is nearly 5,000 students, half the size of the largest elementary district (Montana OPI, 1989).

Funding category 1 (elementary) and category 9 (high school) receive a base amount of funding regardless of the number of students in those categories. Because the state school funding system in Montana recognizes the need for base funding for 9 or fewer students in the smallest elementary and 24 or fewer students in the smallest high school districts, per student costs for schools in funding categories 1 and 9 were calculated using the maximum ANB number for each category, i.e., 9 for elementary and 24 for high school districts. In some instances, two or three very small rural elementary schools are combined into one district and receive separate category 1 funding for one or more of the schools. In those instances, the divisor for per student calculations was the maximum of 9 for the school(s) with base funding in category 1, added to the other school ANB. A flat funding divisor was used for the schools listed in Appendix A in funding categories 1 and 9.

For the other funding categories, funding is provided per student on a scaled continuum. The schools in the smallest size categories receive more dollars per student than do larger schools, and the high school districts receive more than the elementary.

The 537 operating school districts are listed in Appendix A, along with the three categories into which each district was classified — community-size, instructional level, and funding category.

The other variable factors chosen for inclusion in this study were considered major economic and fiscal components of local school district finances. One of those economic factors, the district property tax base, is often a product of development, state policy decisions, and geography. The property tax base represents the ability of local taxpayers to supplement the budgets of the schools, and is measured in this study as taxpayer capacity (the district property tax base divided by the number of students enrolled in the schools of the district). The school district tax base, the local wealth, is a key factor in the lawsuits challenging public school finance systems across the country (Mitang, 1989).

The other variable factors included in this study are fiscal components subject to local decision, though they may be driven indirectly by outside forces. Local taxpayer support for schools provides a measure of the application of taxpayer capacity. For this study, taxpayer capacity is a function of school district levy revenues divided by the number of students

enrolled in the district. Teachers' salaries, measured for this study as average district teacher salary, are determined at the district level and represent a large share of the expenditures of a district (Dunne & Carlsen, 1981; Montana OPI, 1989).

Two other fiscal factors included in this study involve school district expenditures. School district budgets are locally managed and the amount expended in each area is not subject to state regulation. Since instruction is the business of the schools, instructional expenditures per student were included as a variable factor. Instruction must be supported by a facility and administrative functions; therefore, overhead expenditures per student were included as another variable factor.

Expenditure data, taxpayer information, teacher salary, enrollment figures, and funding categories for school year 1988-89 were obtained from the Office of Public Instruction database obtained from school district reports submitted to the Montana Office of Public Instruction: trustee report, budget, pupil data report, and fall report. Several researchers sought studies using existing databases (Barker & Stephens, 1985; Carlson, 1989; McIntire, 1989; Pucciano, 1987; NIE, 1985). Recent policy changes in the Montana Office of Public Instruction restructured the data input process so that information could be coordinated more easily for study. Analysis of data from years prior to school year 1988-89 would have been extremely difficult; school year 1988-89 data provided the most recent comprehensive data.

Transportation of students to and from school is also the business of schools, particularly in a rural area. Although research is also lacking in this area (Barker, 1985), transportation costs are not included in this study. The 1989 Montana Legislation mandated a study of school transportation structure and costs. The Office of Public Instruction presented a report for that study (Thomson, 1990) indicating district on-schedule costs were not uniformly reported by elementary and high school districts when those districts shared administrative services. The reimbursement methods for elementary and high school districts were disparate, and fostered decisions to receive reimbursement through the high school district rather than prorated. Consequently, the expenditure reports and the reimbursement amounts are not comparable by school district and level. It seemed inappropriate to include research factors derived from faulty data. Therefore, transportation costs are not considered in this study.

Specific school year 1988-89 data elements for each school district included: (1) foundation program schedule payments; (2) average-number-belonging (ANB) statistics; (3) NCES community-size locale classification for Montana school districts; (4) mileage between extreme rural districts; (5) taxable valuation; (6) local tax levies for the general fund, retirement, and comprehensive insurance fund; (7) enrollment as reported on October 1st; (8) reported teacher salaries; and (9) trustees' expenditures reported by accounting codes for the general fund, retirement fund, and comprehensive insurance fund.

Procedures

The following steps were taken to complete the research in this study:

Step 1. The 537 Montana operating public school districts in the 1988-89 school year were divided into four school location categories from the model used by the National Center for Education Statistics (NCES, 1989) for school locale typology: mid-size city, central cities of standard metropolitan statistical areas (SMSA) with populations less than 400,000; large town, not in an SMSA but has 25,000 or more population; small town, less than 25,000 but more than 2,500 population; and rural, a population of 2,500 inhabitants or less. Urban fringe areas for cities are within the SMSA defined by the Census Bureau.

In the 1988-89 school year, Montana schools conformed to five NCES categories: mid-size city (19.84%), urban fringe of mid-size city (0.75%), large town (3.70%), small town (36.90%), and rural (38.81%). Since the urban fringe category involved less than 1.0% of the schools, that group was included with the mid-size city category.

The school districts classified as rural were subdivided into isolated extreme rural, extreme rural, and small rural. The extreme rural subcategories include districts of fewer than 200 elementary students (approximately 22 per grade for K-8), and 100 high school students (approximately 25 students in each grade). These sizes were chosen as practical for utilization

of staff and facilities, conforming to accreditation standards for class size and program requirements. The small rural category was subdivided into isolated extreme rural (schools which are located more than 20 miles from other schools), and extreme rural (schools which are located 20 miles or less from another school). The small rural category includes all other districts in the NCES rural locale classification. (See Table 1 for community-size categories.)

Step 2. The school districts were identified and grouped into two instructional levels, either as elementary (kindergarten through grade 8) or high school (grades 9 through 12). In school year 1988-89, all Montana school districts were classified and organized as either elementary or high school districts.

Step 3. The school districts were identified and classified by the foundation program funding category used to calculate the district foundation program amounts for school year 1988-89. (Refer to Table 2 for a list of the funding categories.)

Step 4. The ability or capacity of taxpayers to support schools was determined for each district by dividing the assessed taxable valuation by the reported October 1, 1988, school district enrollment to determine taxpayer capacity, reflecting the per student ability of the local taxpayers to support school district costs. If the assessed taxable valuation of a school district were $1,000 and the enrollment 50 students, the taxpayer capacity would be

$20.00 ($1,000 divided by 50). A wealthier district with fewer students would have a higher capacity; a mill value of $5,000 and enrollment of 29 would result in a taxpayer capacity of $172.41 ($5,000 divided by 29). The enrollment divisor for small districts receiving base funding was the maximum base funding number, 9 for elementary and 24 for high school districts, or was a combined base funding number for those small elementary districts with more than one school in the smallest funding category.

Step 5. The local effort to support schools was analyzed as a product of the local revenue raised from local property tax levies for the general fund, retirement fund, and comprehensive insurance fund, divided by the October 1, 1988, reported student enrollment. If the local levy amount were $15,000 and the enrollment 50, the taxpayer effort would be $300.00 ($15,000 divided by 50). The effort would be higher if the local levies were higher; if the local levy amount were raised to $50,000, the measure of effort would be $1,000.00 ($50,000 divided by 50).

Step 6. Instructional and overhead expenditures were identified on school district trustees' reports for school year 1988-89 using accounting codes assigned to specific program expenditures in the general fund, comprehensive insurance fund, and retirement fund. Instructional expenditures include those costs coded as instruction, educational media, instructional supportive services, student support, and student activities. When applying multiple regression techniques, the instructional costs were

modified by removing those costs identified as salary, since teacher salary represents from 70 to 80% of the instructional costs, and another variable factor represented average teacher salary. Overhead expenditures include those costs coded as general administration, building administration, and operations and maintenance. Expenditures for capital outlay were excluded in both the instruction and overhead categories. In order to provide comparability, expenditures were studied on a per student basis.

Step 7. The annual average teacher salary for each school district was determined using school year 1988-89 teacher salary data reported to the Montana Office of Public Instruction on the 1988 Fall Report.

Hypotheses

Two types of hypotheses were developed. The first set (Hypotheses 1 through 5) examined individual economic and fiscal characteristics of school districts by community size and instructional level. The second set (Hypotheses 6 through 10) examined the effect of six predictor variables on an independent variable.

The following hypotheses were tested in this study:

Hypothesis 1. There is no interaction between community size and instructional level of school districts in relation to per student instructional expenditures. There is no significant difference in per student instructional expenditures between school districts classified by community size and instructional level.

Hypothesis 2. There is no interaction between community size and instructional level of school districts in relation to per student overhead expenditures. There is no significant difference in per student overhead expenditures between school districts classified by community size and instructional level.

Hypothesis 3. There is no interaction between community size and instructional level of school districts in relation to average teacher salary. There is no significant difference in average teacher salary between districts classified by community size and instructional level.

Hypothesis 4. There is no interaction between community size and instructional level of school districts in relation to taxpayer capacity. There is no significant difference in taxpayer capacity between school districts classified by location and community size level.

Hypothesis 5. There is no interaction between community size and instructional level of school districts in relation to taxpayer effort. There is no significant difference in taxpayer effort between school districts classified by location and instructional level.

Hypothesis 6. There is no significant relationship between per student instructional expenditures and the set of variables of: taxpayer capacity, taxpayer effort, overhead expenditures, average teacher salary, community size, and funding category.

Hypothesis 7. There is no significant relationship between per student overhead expenditures and the set of variables of: taxpayer capacity,

taxpayer effort, instructional expenditures, average teacher salary, community size, and funding category.

Hypothesis 8. There is no significant relationship between school district average teacher salary and the set of variables of: taxpayer capacity, instructional expenditures, overhead expenditures, taxpayer effort, community size, and funding category.

Hypothesis 9. There is no significant relationship between school district taxpayer capacity and the set of variables of: instructional expenditures, taxpayer effort, overhead expenditures, average teacher salary, community size, and funding category.

Hypothesis 10. There is no significant relationship between school district taxpayer effort and the set of variables of: taxpayer capacity, overhead expenditures, instructional expenditures, average teacher salary, community size, and funding category.

Statistical Techniques

The population for this study was the universe of 537 operating public school districts in Montana in school year 1988-89. For this study, this population is treated as a sample representation of small and rural school districts in the nation. The groups are of unequal size.

The 10 hypotheses were divided into two groups for application of two separate statistical procedures, a two-way analysis of variance and multiple regression. This study was designed to examine all possibilities of

relationships or differences between variables; therefore, the increased probability of a Type II error was considered less detrimental to this study than a stringent avoidance of a Type I error. A significance level of 0.05 was used throughout the study to maintain a balance between Type I and Type II errors (Ferguson, 1981).

Ferguson (1981) indicated the two-way analysis of variance is the appropriate statistical analysis when investigating interaction between two independent variables. Therefore, two-way analysis of variance procedures were used to test the first set of hypotheses (1 through 5) to determine if interaction was significant at the 0.05 level between each selected fiscal and economic variable and school district community size and instructional level. The variables listed in Table 3 were used for the first five hypotheses.

Table 3. Variables tested for Hypotheses 1 through 5.

Hypothesis No.	VARIABLES	
	Independent (all hypotheses)	Dependent
1	Community Size - and - Instructional Level	Instructional Expenditures
2		Overhead Expenditures
3		Average Teacher Salary
4		Taxpayer Capacity
5		Taxpayer Effort

The test for interaction and main effects was followed by application of a comparison of simple main effects to determine the location of significant

differences indicated by a significant main effect. Although Gay (1988) indicated the Scheffé test as the most commonly used multiple comparison technique, the conservative Scheffé method is extremely rigorous in providing that the probability of a Type I error is never greater than the level selected for the original analysis of variance. Since this study was designed to examine all possible differences between groups, the less strenuous Newman-Keuls procedure was applied at the 0.05 significance level to compromise between Type I and Type II errors (Ferguson, 1981) to further explore the location of significant differences between districts by community size.

Multiple regression procedures were used to test the second set of hypotheses (6 through 10), again employing a 0.05 level of significance. Kerlinger and Pedhazur (1973) described multiple regression analysis as well suited to studying the influence of several independent variables on a dependent variable. They also recommended a sample size to independent variable relationship of at least 30 to 1; the relationship in this study was 90 to 1.

The dependent variable y′ was x_{y6} in Hypothesis 6, x_{y7} in Hypothesis 7, x_{y8} in Hypothesis 8, x_{y9} in Hypothesis 9, and x_{y10} in Hypothesis 10. When used as a dependent variable, the factor was no longer a predictor variable. The six remaining predictor variables made up each set of independent variables for Hypotheses 6 through 10. Stepwise regression was applied

using R^2 to determine the unique contribution of each independent variable in the regression. Table 4 shows the regression equation and variables for Hypotheses 6 through 10.

Table 4. Variables tested for Hypotheses 6 through 10 using regression equation: $y' = b_1x_1 + \ldots + b_6x_6 + a$.*

Hypoth. No.	PREDICTOR VARIABLES Independent**	Dependent
	x_1 = Community Size	
6	x_{y6} = Instructional Expenditures Excluding Salaries	$y' = x_{y6}$
7	x_{y7} = Overhead Expenditures	$y' = x_{y7}$
8	x_{y8} = Average Teacher Salary	$y' = x_{y8}$
9	x_{y9} = Taxpayer Capacity	$y' = x_{y9}$
10	x_{y10} = Taxpayer Effort	$y' = x_{y10}$
	x_6 = Funding Category	

*Other factors: b_1 through b_6 = weights assigned to independent variables; a = the intercept.
**When used as a dependent variable, the factor is no longer a predictor variable.

Summary

The first problem of the study was to classify Montana public school districts into groups by community size and instructional level. The second problem was to determine for each school district the economic and fiscal characteristics used in this study. The third problem was to apply appropriate statistical methods to discover differences and relationships between the selected variables.

CHAPTER 4

ANALYSIS OF DATA

The problem of this study was to determine the relationship between community size and instructional level of public school districts and selected school district fiscal and economic characteristics. Those characteristics include: (1) the foundation program funding category for the district; (2) per student instructional expenditures; (3) per student instructional expenditures excluding salaries and benefits; (4) per student overhead expenditures; (5) school district average teacher salary; (6) per student taxable valuation, identified as taxpayer capacity; and (7) per student local levy amounts, identified as taxpayer effort.

Data were gathered for this study from all the 537 operating Montana public school districts, school year 1988-89, as a sample of rural and small school districts in the nation. School district data elements were obtained from the 1988-89 school district database maintained by the Montana Office of Public Instruction, and based on school district annual reports to the Montana Office of Public Instruction: trustees' reports, budget reports, and fall reports. Information concerning distances between rural schools was obtained from legislative reports, records, maps, and school personnel.

Districts were assigned to community-size categories using data obtained from the U.S. Department of Education in cooperation with the U.S. Census Bureau. Montana public school districts are separate legal entities for elementary and high school instructional programs and were studied in those two instructional levels. Table 5 shows the distribution of the school districts into the six community-size categories and two instructional levels, as well as the number of students represented in each of those groupings.

Table 5. Distribution of sample means and represented student population for community size and instructional level, school year 1988-89.

Community Size	Instructional Level				TOTAL	
	Elementary		High School			
	N	%	N	%	N	%
Mid-Size City						
Districts	14	4	4	2	18	3
Students	22,843	21	8,556	20	31,399	21
Large Town						
Districts	4	1	2	1	6	1
Students	11,032	10	5,043	12	16,075	11
Small Town						
Districts	34	9	30	18	64	12
Students	41,812	38	17,353	40	59,165	39
Small Rural						
Districts	56	15	42	26	98	18
Students	19,040	17	7,119	18	26,159	17
Extreme Rural						
Districts	139	37	45	28	184	34
Students	8,601	8	2,200	5	10,801	7
Extreme Rural Isolated						
Districts	127	34	40	25	167	31
Students	6,179	6	2,265	5	8,444	5
Total All Communities						
Districts	374	100	163	100	537	100
Students	109,507	100	42,536	100	152,043	100

Ten research questions were posed in this study to investigate the relationships of the selected fiscal and economic characteristics, community size, and instructional level. Hypotheses were developed to answer the research questions, which were divided into two groups for application of different statistical procedures — a two-way analysis of variance and multiple regression analysis. All hypotheses were tested at the .05 level of significance.

Two-Way Analysis of Variance

The first set of hypotheses (1 through 5) was tested with a two-way analysis of variance to examine the relationship of community size and instructional level with five individual economic and fiscal characteristics of school districts: (1) per student instructional expenditures, (2) per student overhead expenditures, (3) district average teacher salary, (4) per student taxpayer capacity, and (5) per student taxpayer effort. Two-way analysis of variance procedures were used to test Hypotheses 1 through 5. A planned comparison of simple main effects was done to examine the significant main effects for community size. No follow-up test was used for a significant main effect for instructional level, since the means are automatically significantly different from each other when a variable has only two levels. The post hoc Newman-Keuls procedures were applied to determine if significant differences existed between all possible pairs of community size groups when no variable for instructional level was included.

Per Student Instructional Expenditures

The first research question asked was: *Is there a significant difference in per student instructional expenditures between elementary and high school districts classified by community size?*

Three null hypotheses were developed to address this question:

Hypothesis 1.1. There is no interaction between community size and instructional level of school districts in relation to per student instructional expenditures.

Hypothesis 1.2. There is no significant difference in per student instructional expenditures between school districts classified by community size.

Hypothesis 1.3. There is no significant difference in per student instructional expenditures between school districts classified by instructional level.

Tables 6 and 7 display the means and the results of applying a two-way ANOVA to test the hypotheses.

Table 6. Means for per student instruction expenditures by community size and instructional level.

Community Size	Elementary		High School		Total	
	N	Mean	N	Mean	N	Mean
1. Mid-Size City	14	2152	4	2403	18	2207
2. Large Town	4	1946	2	2797	6	2229
3. Small Town	34	1918	30	2499	64	2190
4. Small Rural	56	2030	42	2837	98	2376
5. Extreme Rural	139	2308	45	4501	184	2844
6. Extreme Rural Isolated	127	2248	40	4280	167	2734
Total	374	2201	163	3578	537	2619

Table 7. Results of two-way ANOVA on per student instruction expenditures by community size and instructional level.

Source of Variation	Sum of Squares	DF	Mean Square	F	p
Main Effects	289243277	6	48207213	80.112	.001*
Community Size	74094142	5	14818828	24.646	.001*
Instructional Level	256161847	1	256161847	425.698	.001*
Two-Way Interactions Comm Size x Level	55185500	5	11037100	18.342	.001*
Residual (unexplained)	315916171	525	601745		
Total	2329942438	536			

*Statistically significant difference.

Table 7 indicates a statistically significant interaction between the six community size categories and the two instructional levels (F = 18.342, p = .001) with regard to instructional expenditures. Therefore, Hypothesis 1.1 was rejected. The pattern of the interaction is displayed in Figure 1.

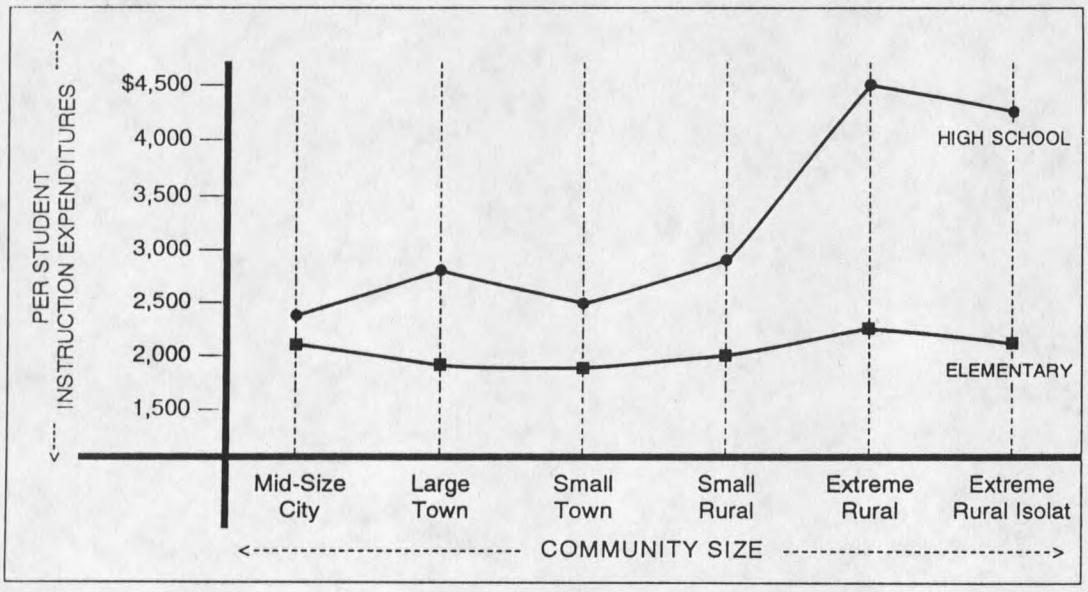

Figure 1. Mean school district per student instruction expenditures by community size and instructional level.

The differences do not remain constant between the expenditures at the elementary level and the expenditures at the high school level. Figure 1 clearly illustrates different patterns for instructional expenditures at the elementary and high school levels.

Table 7 indicates that the two-way analysis main effects for both community size ($F = 24.626$, $p = .001$) and instructional level ($F = 425.698$, $p = .001$) were significant at the .05 level; therefore, Hypotheses 1.2 and 1.3 were rejected. A one-way ANOVA was used to do a comparison of simple main effects. The results are shown in Table 8 and indicate that within the community size factor, instructional expenditures means were significantly higher at the high school level, with the exception of mid-size city.

Table 8. Test of simple main effects to determine the interaction for each pair, comparing elementary to high school instructional expenditures by community size categories.

Community Size	One-Way ANOVA	
	F	p
1. Mid-Size City	.150	.703
2. Large Town	12.995	.023*
3. Small Town	30.235	.001*
4. Small Rural	57.732	.001*
5. Extreme Rural	245.250	.001*
6. Extreme Rural Isolated	152.037	.001*

*Statistically significant difference.

The two-way analysis of variance test uncovered differences that would not have been evident in a simple one-way analysis. The results of the two-way ANOVA supported findings from separate one-way analyses for instructional expenditures which indicated significant differences between community size groups ($F = 5.601$, $p = .001$) and instructional level ($F = 258.549$, $p = .001$). A post hoc Newman-Keuls application indicated that the only four significant community size differences for instructional expenditures were between two pairs of groups: (1) extreme rural and small town, (2) extreme rural and small rural, (3) extreme rural isolated and small town, and (3) extreme rural isolated and small rural.

Per Student Overhead Expenditures

The second research question asked was: *Is there a significant difference in per student overhead expenditures between elementary and high school districts classified by community size?*

Three null hypotheses were developed to address this question:

Hypothesis 2.1. There is no interaction between community size and instructional level of school districts in relation to per student overhead expenditures.

Hypothesis 2.2. There is no significant difference in per student overhead expenditures between school districts classified by community size.

Hypothesis 2.3. There is no significant difference in per student overhead expenditures between school districts classified by instructional level.

Tables 9 and 10 display the means and the results of applying a two-way ANOVA to test the hypotheses.

Table 9. Means for per student overhead expenditures by community size and instructional level.

Community Size	Elementary		High School		Total	
	N	Mean	N	Mean	N	Mean
1. Mid-Size City	14	818	4	901	18	836
2. Large Town	4	754	2	1098	6	869
3. Small Town	34	755	30	1218	64	972
4. Small Rural	56	840	42	1543	98	1141
5. Extreme Rural	139	1005	45	2579	184	1390
6. Extreme Rural Isolated	127	927	40	2648	167	1339
Total	374	921	163	2019	537	1255

Table 10. Results of two-way ANOVA on per student overhead expenditures by community size and instructional level.

Source of Variation	Sum of Squares	DF	Mean Square	F	p
Main Effects	172242884	6	28707147	68.503	.001*
Community Size	35502095	5	7100419	16.944	.001*
Instructional Level	157257646	1	157257646	375.260	.001*
Two-Way Interactions					
Comm Size x Level	32482191	5	6496438	15.502	.001*
Residual (unexplained)	220008291	525	419063		
Total	424733364	536			

*Statistically significant difference.

Table 10 indicates a statistically significant interaction between the six community size categories and the two instructional levels (F = 15.502,

p = .001) with regard to overhead expenditures. Therefore, Hypothesis 2.1 was rejected. The pattern of the interaction is displayed in Figure 2.

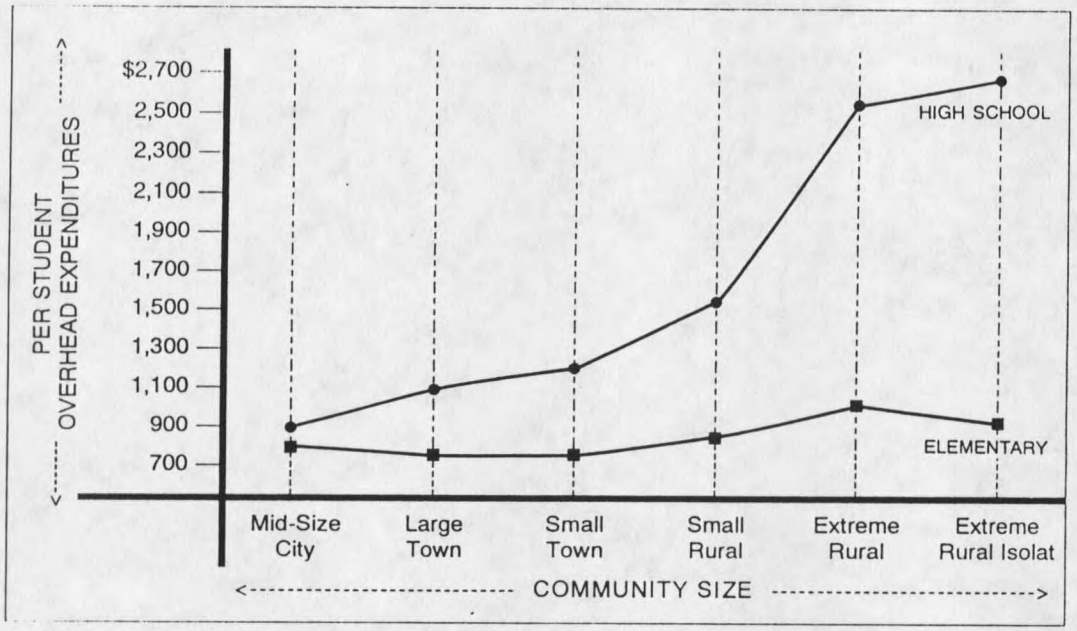

Figure 2. Mean school district per student overhead expenditures by community size and instructional level.

The differences do not remain constant between the expenditures at the elementary level and the expenditures at the high school level. Figure 2 clearly illustrates different patterns for overhead expenditures at the elementary and high school levels.

Table 10 indicates that the main effects for both community size (F = 16.944, p = .001) and instructional level (F = 375.260, p = .001) were significant at the .05 level; therefore, Hypotheses 2.2 and 2.3 were rejected. A one-way ANOVA was used to do a comparison of simple main effects. The results are shown in Table 11 and indicate that within the community

size factor, four levels were significantly higher for the high school districts. The mid-size city means difference was not significant at the .05 level.

Table 11. Test of simple main effects to determine the interaction for each pair, comparing elementary to high school overhead expenditures by community size categories.

Community Size	One-Way ANOVA	
	F	p
1. Mid-Size City	.078	.784
2. Large Town	8.106	.047*
3. Small Town	36.068	.001*
4. Small Rural	44.186	.001*
5. Extreme Rural	168.193	.001*
6. Extreme Rural Isolated	160.165	.001*

*Statistically significant difference.

The two-way analysis of variance test uncovered differences that would not have been evident in simple one-way analysis. The results of the two-way ANOVA supported separate one-way analyses for overhead expenditures which indicated significant differences between community size groups ($F = 3.884$, $p = .001$) and instructional level ($F = 254.022$, $p = .001$). A post hoc Newman-Keuls application indicated that the only two significant community size differences for overhead expenditures were between: (1) extreme rural and small town and (2) extreme rural isolated and small town.

School District Average Teacher Salary

The third research question asked was: *Is there a significant difference in average teacher salary between elementary and high school districts classified by community size?*

Three null hypotheses were developed to address this question:

Hypothesis 3.1. There is no interaction between community size and instructional level of school districts in relation to average teacher salary.

Hypothesis 3.2. There is no significant difference in average teacher salary between school districts classified by community size.

Hypothesis 3.3. There is no significant difference in average teacher salary between school districts classified by instructional level.

Tables 12 and 13 display the means and the results of applying a two-way ANOVA to test the hypotheses.

Table 12. Means for school district average teacher salary by community size and instructional level.

Community Size	Elementary		High School		Total	
	N	Mean	N	Mean	N	Mean
1. Mid-Size City	14	21421	4	25545	18	22338
2. Large Town	4	25847	2	30508	6	27400
3. Small Town	34	24683	30	26146	64	25369
4. Small Rural	56	23093	42	23494	98	23265
5. Extreme Rural	139	17803	45	21275	184	18652
6. Extreme Rural Isolated	127	16468	40	20809	167	17507
Total	374	18989	163	22847	537	20160

Table 13. Results of two-way ANOVA on school district average teacher salary by community size and instructional level.

Source of Variation	Sum of Squares	DF	Mean Square	F	p
Main Effects	5512862988	6	918810498	96.807	.001*
Community Size	3822874395	5	764574879	80.557	.001*
Instructional Level	838662814	1	838662814	88.363	.001*
Two-Way Interactions					
Comm Size x Level	264177978	5	52835596	5.567	.001*
Residual (unexplained)	4982858149	525	525185542		
Total	10759899115	536			

*Statistically significant difference.

Table 13 indicates a statistically significant interaction between the six community size categories and the two instructional levels ($F = 5.567$, $p = .001$) with regard to average teacher salary. Therefore, Hypothesis 3.1 was rejected. The pattern of the interaction is displayed in Figure 3.

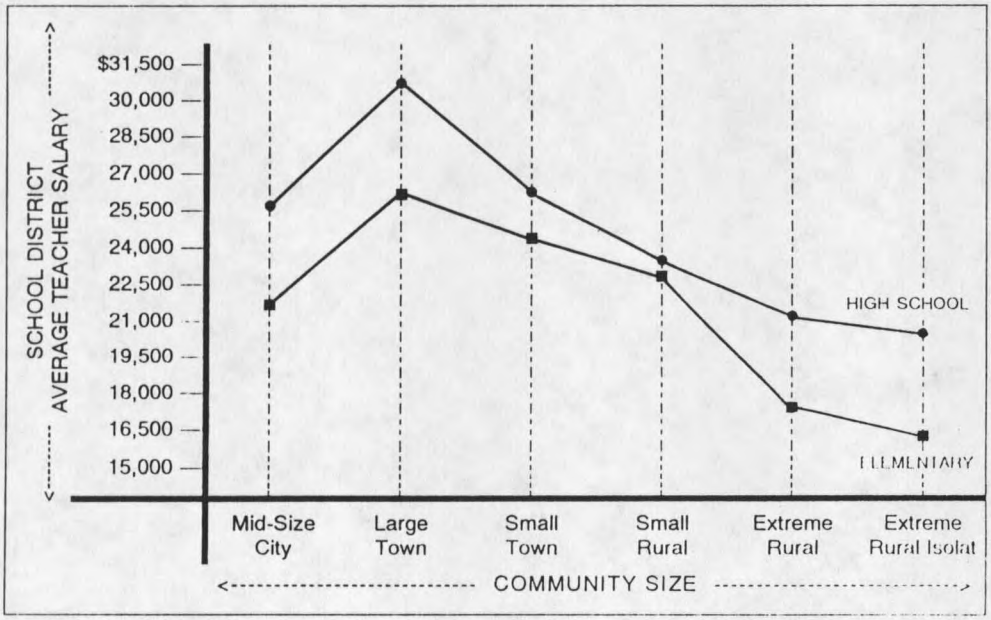

Figure 3. Mean school district average teacher salary by community size and instructional level.

The differences do not remain constant between the expenditures at the elementary level and the expenditures at the high school level. Figure 3 clearly illustrates different patterns for average teacher salary at the elementary and high school levels.

Table 13 indicates that the main effects for both community size ($F = 80.557$, $p = .001$) and instructional level ($F = 88.363$, $p = .001$) were significant at the .05 level; therefore, Hypotheses 3.2 and 3.3 were rejected. A one-way ANOVA was used to do a comparison of simple main effects. The results of a test of simple main effects are shown in Table 14 and indicate that within the community size factor, average teacher salary was significantly higher for the high school than for the elementary districts in four of the six levels: mid-size city, small town, extreme rural, and extreme rural isolated. Only large town and small rural did not demonstrate significant differences between high school and elementary districts.

Table 14. Test of simple main effects to determine the interaction for each pair, comparing elementary to high school average teacher salary by community size categories.

Community Size	One-Way ANOVA	
	F	p
1. Mid-Size City	6.660	.020*
2. Large Town	3.764	.124
3. Small Town	5.955	.018*
4. Small Rural	.856	.357
5. Extreme Rural	35.571	.001*
6. Extreme Rural Isolated	48.751	.001*

*Statistically significant difference.

The two-way analysis of variance test uncovered differences that would not have been evident in simple one-way analysis. The two-way ANOVA supported one-way analyses of variance for average teacher salary which showed significant differences between community size groups ($F = 81.568$, $p = .001$) and instructional level ($F = 99.686$, $p = .001$). A post hoc Newman-Keuls application indicated significant community size differences for average teacher salary exist for 13 of the 15 group pairs. The only pairs without significant differences were: (1) mid-size city and small rural and (2) small town and large town.

Per Student Taxpayer Capacity

The fourth research question asked was: *Is there a significant difference in taxpayer capacity between elementary and high school districts classified by community size?*

Three null hypotheses were developed to address this question:

Hypothesis 4.1. There is no interaction between community size and instructional level of school districts in relation to taxpayer capacity.

Hypothesis 4.2. There is no significant difference in taxpayer capacity between school districts classified by community size.

Hypothesis 4.3. There is no significant difference in taxpayer capacity between school districts classified by instructional level.

Tables 15 and 16 display the means and results of applying a two-way ANOVA to test the hypotheses.

Table 15. Means for per student taxpayer capacity by community size and instructional level.

Community Size	Elementary		High School		Total	
	N	Mean	N	Mean	N	Mean
1. Mid-Size City	14	15924	4	27351	18	18463
2. Large Town	4	10330	2	25215	6	15292
3. Small Town	34	17068	30	50877	64	32916
4. Small Rural	56	15760	42	68046	98	38168
5. Extreme Rural	139	72380	45	89423	184	76548
6. Extreme Rural Isolated	127	103213	40	83371	167	98460
Total	374	66567	163	73024	537	68527

Table 16. Results of two-way ANOVA on student taxpayer capacity by community size and instructional level.

Source of Variation	Sum of Squares	DF	Mean Square	F	p
Main Effects	425683847311	6	70947307885	.880	.509
Community Size	420950230649	5	84190046130	1.045	.391
Instructional Level	30609581287	1	30609581287	.380	.538
Two-Way Interactions					
Comm Size x Level	75773335505	5	15154667101	.188	.967
Residual (unexplained)	42313834000000	525	80597779593		
Total	42815291000000	536	79879275129		

Table 16 indicates that the interaction between the six community size categories and the two instructional levels ($F = .188$, $p = .967$) was not significant with regard to taxpayer capacity. Therefore, Hypothesis 4.1 was retained. The main effects for community size ($F = 1.045$, $p = .391$) and for instructional level ($F = .380$, $p = .538$) were not significant at the .05 level; therefore, Hypotheses 4.2 and 4.3 were also retained.

Per Student Taxpayer Effort

The fifth research question asked was: *Is there a significant difference in taxpayer effort between elementary and high school districts classified by community size?*

Three null hypotheses were developed to address this question:

Hypothesis 5.1. There is no interaction between community size and instructional level of school districts in relation to taxpayer effort.

Hypothesis 5.2. There is no significant difference in taxpayer effort between school districts classified by community size.

Hypothesis 5.3. There is no significant difference in taxpayer effort between school districts classified by instructional level.

Tables 17 and 18 display means and the results of applying a two-way ANOVA to test the hypotheses.

Table 17. Means for per student taxpayer effort by community size and instructional level.

Community Size	Elementary		High School		Total	
	N	Mean	N	Mean	N	Mean
1. Mid-Size City	14	777	4	1217	18	874
2. Large Town	4	903	2	1766	6	1190
3. Small Town	34	827	30	1599	64	1189
4. Small Rural	56	759	42	1941	98	1266
5. Extreme Rural	139	1632	45	2884	184	1938
6. Extreme Rural Isolated	127	1529	40	2968	167	1873
Total	374	1353	163	2370	537	1662

Table 18. Results of two-way ANOVA on student taxpayer effort by community size and instructional level.

Source of Variation	Sum of Squares	DF	Mean Square	F	p
Main Effects	217908024	6	36318004	9.056	.001*
Community Size	100455668	5	20091134	5.010	.001*
Instructional Level	154189759	1	154189759	38.450	.001*
Two-Way Interactions Comm Size x Level	6697351	5	1339470	.334	.892
Residual (unexplained)	2105337063	525	4010166		
Total	2329942438	536			

*Statistically significant difference.

Table 18 shows that the interaction between the six community size categories and the two instructional levels (F = .334, p = .892) was not significant with regard to taxpayer effort. Therefore, Hypothesis 5.1 was retained. The main effect for community size (F = 5.010, p = .001) and for instructional level (F = .380, p = .001) was significant at the .05 level; therefore, Hypotheses 5.2 and 5.3 were rejected.

The two-way analysis of variance test indicated a lack of interaction which would not have been evident in simple one-way analysis. One-way analysis of variance for taxpayer effort also indicated significant differences between community size groups (F = 2.986, p = .011) and instructional level (F = 28.401, p = .001). A post-hoc Newman-Keuls application indicated that two significant community size differences for taxpayer effort exist between (1) extreme rural and small rural and (2) extreme rural isolated and small rural.

Summary of Two-Way Analysis of Variance

The results for the two-way ANOVA tests for Hypotheses 1 through 5 are summarized in Table 19.

Table 19. Summary results of two-way ANOVA (N=537) on dependent variables, by community size and instructional level.

Hyp No.	Dependent Variable	Interaction		Main Effects			
				Commun Size		Instruct Level	
		F	p	F	p	F	p
1	Instructional Expenditures	18.342	.001*	24.646	.001*	425.698	.001*
2	Overhead Expenditures	15.502	.001*	16.944	.001*	375.260	.001*
3	Average Teacher Salary	5.567	.001*	80.557	.001*	88.363	.001*
4	Taxpayer Capacity	.188	.967	1.045	.391	.380	.538
5	Taxpayer Effort	.334	.892	5.010	.001*	38.450	.001*

*Statistically significant difference.

Multiple Regression Analysis

The second set of hypotheses (6 through 10) explored the effect of six predictor variables on an independent variable to observe the relationships and determine the contribution of the predictor variables to a criterion variable. The variables used in the first set of hypotheses (1 through 5) are also used for this set of variables with adjustments for two of the variables. Instructional expenditures were adjusted to exclude salaries to differentiate instructional costs from the average teacher salary variable. Instructional expenditures could be expected to be highly intercorrelated with average

teacher salary because a large portion of instructional costs are attributable to salary (Dunne & Carlsen, 1981; Jewell, 1990). The variable of instructional level is replaced with funding category to expand a variable from two to fifteen levels. The elementary and high school distinction between districts provides a limited two-level scale and is not as reflective of the fiscal attributes of this variable as the funding category grouping. High schools receive more state financial support per student than elementary schools, as discussed in Chapter 2, and the use of funding category reflects each of the funding level categories shown in Table 2 (Chapter 2).

Multiple regression analysis was used to test this set of hypotheses. Kerlinger and Pedhazur (1973) recommended a sample size to independent variable relationship of at least 30 to 1; the relationship in this study is 90 to 1. Forward (stepwise) inclusion multiple correlation, using standard regression methods, determined which regression coefficients significantly contributed to the multiple regression equation.

Instructional Expenditures Excluding Salaries

The sixth research question asked was: *What is the relationship of taxpayer capacity, taxpayer effort, overhead expenditures, average teacher salary, school district community size, and funding category to instructional expenditures?*

The following hypothesis was developed to address that question:

Hypothesis 6. There is no significant relationship between school district instructional expenditures excluding salaries, and the set of variables of: taxpayer capacity, taxpayer effort, average teacher salary, overhead expenditures, school district community size, and funding category.

The results of applying multiple regression techniques combined with forward (stepwise) inclusion indicate a significant relationship exists between school district instructional expenditures excluding salaries and three of the six variables in the equation: overhead expenditures ($T = 19.967$, $p = .001$), tax capacity ($T = 3.214$, $p = .001$), and tax effort ($T = -2.045$, $p = .041$). Therefore, the null hypothesis was rejected.

Table 20 lists the results of the multiple regression analysis showing the variables in and out of the regression equation. Observation of the standardized regression coefficient indicates a strong measure of influence (Beta = .729) for overhead expenditures on instructional expenditures excluding salaries.

Summary Table 21 shows an adjusted R^2 of .4945, indicating that 49.45% of the variation in instructional expenditures excluding salaries is explained by overhead expenditures, tax capacity, and tax effort operating jointly. Examination of the R^2 changes shows that tax capacity and tax effort contribute only .009 beyond the overhead expenditures contribution to the explanation of the variation in instructional expenditures excluding salaries. In addition, the standard error range is reduced by only $4.00 when the taxpayer variables are added to the equation. Despite the statistical significance

of taxpayer capacity and taxpayer effort, the addition of those variables to the equation provide little practical significance; therefore, these two variables were eliminated from the regression formula.

Table 20. Results of multiple regression analysis: Variables in and out of the regression equation for instructional expenditures excluding salaries (N=537).

Variables	VARIABLES IN THE EQUATION				
	B	Standard Error of B	Standard-ized Beta	T	p
Overhead Expenditures	.2720	.0136	.7294	19.967	.001
Taxpayer Capacity	.0002	.0001	.1850	3.214	.001
Taxpayer Effort	-.0203	.0099	-.1273	-2.048	.041
Constant	187.1258	17.9689		10.414	.001
Variables	**VARIABLES NOT IN THE EQUATION**				
	Beta Influence	Partial	Minimum Tolerance	T	p
Funding Category	-.0207	-.0269	.2439	-.621	.535
Community Size	-.0340	-.0471	.2435	-1.088	.277
Average Teacher Salary	.0261	.0361	.2436	.834	.405

Table 21. Summary of stepwise regression procedures for instructional expenditures excluding salaries.

Step	Variable Entered	Mult R	Adjust R^2	Std Error	R^2 Change	F	p
1	Overhead Expenditures	.6972	.4851	238.17	.4851	506.081	.001
2	Taxpayer Capacity	.7024	.4915	236.71	.0064	259.996	.001
3	Taxpayer Effort	.7052	.4945	236.00	.0031	175.765	.001

The adjusted formula for prediction, based on the unstandardized regression coefficient B, shown in Table 20, is: INSTRUCTIONAL EXPENDITURES EXCLUDING SALARIES (Y′) = 187.1258 + (.2720 * OVERHEAD EXPENDITURES).

Overhead Expenditures

The seventh research question asked was: *What is the relationship of taxpayer capacity, taxpayer effort, instructional expenditures, average teacher salary, school district community size, and funding category to overhead expenditures?*

The following hypothesis was developed to address that question:

> Hypothesis 7. There is no significant relationship between school district overhead expenditures and the set of variables of: taxpayer capacity, taxpayer effort, instructional expenditures, average teacher salary, school district community size, and funding category.

The results of applying multiple regression techniques combined with forward (stepwise) inclusion indicate a significant relationship exists between overhead expenditures and five of the six variables in the equation: instructional expenditures excluding salaries (T = 18.592, p = .001), funding category (T = 9.634, p = .001), community size (T = 7.504, p = .001), taxpayer effort (T = 10.237, p = .001), and taxpayer capacity (T = -8.287, p = .001). The only variable that did not show a significant relationship was average teacher salary (T = -.836, p = .404). The null hypothesis was rejected.

Table 22 lists the results of the multiple regression analysis showing the variables in and out of the regression equation. Observation of the standardized regression coefficient indicates relatively strong measures of influence for all five variables included in the regression equation for overhead expenditures.

Table 22. Results of multiple regression analysis: Variables in and out of the regression equation for overhead expenditures (N=537).

Variables	VARIABLES IN THE EQUATION				
	B	Standard Error of B	Standardized Beta	T	p
Instruct Expenditures Excl Salaries	1.3886	.0747	.5178	18.592	.001
Funding Category	73.9924	7.6801	.2979	9.634	.001
Community Size	161.6814	21.5460	.2249	7.504	.001
Taxpayer Effort	.2056	.0201	.4815	10.237	.001
Taxpayer Capacity	-.0012	.0001	-.3742	-8.287	.001
Constant	-928.6371	126.2085		-7.358	.001

Variables	VARIABLES NOT IN THE EQUATION				
	Beta Influence	Partial	Minimum Tolerance	T	p
Average Teacher Salary	-.0330	-.0363	.2876	-.836	.404

Summary Table 23 shows an adjusted R^2 = .6573, indicating that 65.73% of the variation in overhead expenditures is explained by instructional expenditures excluding salaries, funding category, community size, taxpayer effort, and taxpayer capacity operating jointly.

Table 23. Summary of stepwise regression procedures for overhead expenditures.

Step	Variable Entered	Mult R	Adjust R^2	Std Error	R^2 Change	F	p
1	Instruct Expend Excl Salaries	.6972	.4851	638.73	.4852	506.081	.001
2	Funding Category	.7295	.5305	609.96	.0453	303.807	.001
3	Community Size	.7703	.5911	569.21	.0606	259.307	.001
4	Taxpayer Effort	.7852	.6137	553.30	.0225	213.850	.001
5	Taxpayer Capacity	.8127	.6573	521.14	.0436	206.578	.001

The formula for prediction, based on the unstandardized regression coefficient B, shown in Table 22, is: OVERHEAD EXPENDITURES (Y') = - 928.6371 + (1.3886 * INSTRUCTIONAL EXPENDITURES EXCLUDING SALARIES) + (73.9924 * FUNDING CATEGORY) + (161.6814 * COMMUNITY SIZE) + (.2056 * TAXPAYER EFFORT) - (.0012 * TAXPAYER CAPACITY).

Average Teacher Salary

The eighth research question asked was: *What is the relationship of taxpayer capacity, taxpayer effort, instructional expenditures, overhead expenditures, school district community size, and funding category to average teacher salary?*

The following hypothesis was developed to address that question:

Hypothesis 8. There is no significant relationship between average teacher salary and the set of variables of: taxpayer capacity, taxpayer effort, overhead expenditures, instructional expenditures excluding salary, school district community size, and funding category.

The results of applying multiple regression techniques combined with forward (stepwise) inclusion indicate a significant relationship exists between school district average teacher salary and three of the six variables in the equation: funding category ($T = 17.572$, $p = .001$), community size ($T = -10.080$, $p = .001$), and taxpayer effort ($T = 2.687$, $p = .007$). The null hypothesis was rejected.

Table 24 lists the results of the multiple regression analysis showing the variables in and out of the regression equation. Observation of the standardized regression coefficient indicates strong measures of influence for funding category (Beta = .5583) and community size (Beta = -.3230) on average teacher salary, but little influence for taxpayer effort (Beta = .0763).

Summary Table 25 shows an adjusted $R^2 = .5858$, indicating that 58.58% of the variation in teacher salary is explained by funding category, community size, and taxpayer effort operating jointly. Taxpayer effort contributes only .0048 to the knowledge of the variation in average teacher salary. In addition, the standard error range is reduced by only $33.00 with the addition of taxpayer effort to the equation. Despite the statistical significance, the addition of taxpayer effort to the equation provides little practical significance; therefore, taxpayer effort was eliminated from the regression equation.

Table 24. Results of multiple regression analysis: Variables in and out of the regression equation for average teacher salary (N=537).

Variables	VARIABLES IN THE EQUATION				
	B	Standard Error of B	Standard-ized Beta	T	p
Funding Category	697.8737	39.7154	.5583	17.572	.001
Community Size	-1168.8565	115.9613	-.3230	-10.080	.001
Taxpayer Effort	.1640	.0611	.0763	2.687	.007
Constant	21151.3551	694.8256		30.441	.001
Variables	**VARIABLES NOT IN THE EQUATION**				
	Beta Influence	Partial	Minimum Tolerance	T	p
Instruct Expend Excl Salaries	.0292	.0416	.7058	.960	.338
Overhead Expenditures	.0031	.0038	.5752	.088	.930
Taxpayer Capacity	-.0243	-.0213	.3068	-.492	.623

Table 25. Summary of stepwise regression procedures for average teacher salary.

Step	Variable Entered	Mult R	Adjust R^2	Std Error	R^2 Change	F	p
1	Funding Category	.7136	.5083	3141.88	.5083	555.007	.001
2	Community Size	.7632	.5810	2900.38	.0727	372.542	.001
3	Taxpayer Effort	.7669	.5858	2883.63	.0048	253.661	.001

The adjusted formula for prediction, based on the unstandardized regression coefficient B, shown in Table 24, is: AVERAGE TEACHER SALARY (Y′) = 21151.3551 + (697.8737 * FUNDING CATEGORY) - (1168.8565 * COMMUNITY SIZE).

Taxpayer Capacity

The ninth research question asked was: *What is the relationship of funding category, taxpayer effort, overhead expenditures, average teacher salary, school district community size, and instructional expenditures to taxpayer capacity?*

The following hypothesis was developed to address that question:

> Hypothesis 9. There is no significant relationship between school district taxpayer capacity and the set of variables of: funding category, taxpayer effort, instructional expenditures excluding salaries, overhead expenditures, average teacher salary, and school district community size.

The results of applying multiple regression techniques combined with forward (stepwise) inclusion indicate a significant relationship exists between taxpayer capacity and three of the six variables in the equation: taxpayer effort ($T = 36.521$, $p = .001$), overhead expenditures ($T = 10.008$, $p = .001$), and instructional expenditures excluding salaries ($T = 3.214$, $p = .001$). The null hypothesis was rejected.

Table 26 lists the results of the multiple regression analysis showing the variables in and out of the regression equation. Observation of the standardized regression coefficient indicates strong measures of influence for taxpayer effort (Beta = .9077) and overhead expenditures (Beta = -.3304). Examination of the R^2 changes shows that instructional expenditures excluding salaries contributes only an additional .0049 to the explanation of the variation in average teacher salary, and reduces that standard error range by $2,604.

Table 26. Results of multiple regression analysis: Variables in and out of the regression equation for taxpayer capacity (N=537).

Variables	VARIABLES IN THE EQUATION				
	B	Standard Error of B	Standard-ized Beta	T	p
Taxpayer Effort	123.0426	3.3691	.9077	36.521	.001
Overhead Expenditures	-104.9140	10.4825	-.3304	-10.008	.001
Instruct Expend Excl Salaries	87.4735	27.2177	.1027	3.214	.001
Constant	-48910.5052	12325.3066		-3.968	.001
Variables	**VARIABLES NOT IN THE EQUATION**				
	Beta Influence	Partial	Minimum Tolerance	T	p
Funding Category	-.0360	-.0629	.4336	-1.454	.147
Community Size	.0064	.0118	.4733	.272	.785
Average Teacher Salary	-.0297	-.0553	.4743	-1.277	.202

Summary Table 27 shows the adjusted R^2 = .7193, indicating that 71.93% of the variation in taxpayer capacity is explained by taxpayer effort, overhead expenditures, and instructional expenditures excluding salaries operating jointly.

Table 27. Summary of stepwise regression procedures for taxpayer capacity.

Step	Variable Entered	Mult R	Adjust R^2	Std Error	R^2 Change	F	p
1	Taxpayer Effort	.8111	.6572	165475.2287	.6572	1028.626	.001
2	Overhead Expenditures	.8459	.7145	151028.1358	.0573	671.541	.001
3	Instruct Expend Excl Sal	.8491	.7194	149725.9642	.0049	458.958	.001

Although two of the predictor variables exert strong influence on taxpayer capacity, it is impractical to assume that any school district fiscal factor would produce change in taxpayer capacity which is a function of tax base and student enrollment. An analysis of the formula for prediction for taxpayer effort shows that taxpayer effort and taxpayer capacity contribute the same portion of explanation to the variation in each other, 65.7%. Therefore, this formula is disregarded in deference to the use of the formula for prediction of taxpayer effort.

Taxpayer Effort

The tenth research question asked was: *What is the relationship of taxpayer capacity, instructional expenditures, overhead expenditures, average teacher salary, school district community size, and funding category to taxpayer effort?*

The following hypothesis was developed to address that question:

> Hypothesis 10. There is no significant relationship between school district taxpayer effort and the set of variables of: taxpayer capacity, instructional expenditures, overhead expenditures, average teacher salary, school district community size, and funding category.

The results of applying multiple regression techniques combined with forward (stepwise) inclusion indicate a significant relationship exists between taxpayer effort and three of the six variables in the equation: tax capacity ($T = 36.521$, $p = .001$), overhead expenditures ($T = 12.009$, $p = .001$), and instructional expenditures excluding salaries ($T = -2.048$, $p = .001$). The null hypothesis was rejected.

Table 28 lists the results of the multiple regression analysis showing the variables in and out of the regression equation. Observation of the standardized regression coefficient indicates strong measures of influence for taxpayer capacity (Beta = .7872) and overhead expenditures (Beta = .3570) on taxpayer effort. The measure of influence for instructional expenditures is weaker (Beta = -.0613).

Table 28. Results of multiple regression analysis: Variables in and out of the regression equation for taxpayer effort (N=537).

Variables	VARIABLES IN THE EQUATION				
	B	Standard Error of B	Standardized Beta	T	p
Taxpayer Capacity	.0058	.0002	.7872	36.521	.001
Overhead Expenditures	.8362	.0696	.3570	12.009	.001
Instruct Expend Excl Salaries	-.3851	.1880	-.0613	-2.048	.041
Constant	411.1571	.8405		4.892	.001
Variables	**VARIABLES NOT IN THE EQUATION**				
	Beta Influence	Partial	Minimum Tolerance	T	p
Funding Category	.0020	.0038	.4676	.088	.930
Community Size	.0193	.0385	.5022	.887	.375
Average Teacher Salary	.0211	.0421	.5061	.971	.332

Summary Table 29 shows the adjusted R^2 = .7566, indicating that 75.66% of the variation in taxpayer effort is explained by tax capacity, overhead expenditures, and instructional expenditures excluding salaries operating jointly. Examination of the R^2 changes show instructional

expenditures excluding salaries contributes only .0014 beyond the taxpayer capacity and overhead expenditures contribution to the explanation of the variation in taxpayer effort. In addition, the contribution of instructional expenditures excluding salaries reduces the standard error range by only $6.00. Despite the statistical significance, the addition of instructional expenditures to the equation does not add practical significance; therefore, instructional expenditures was excluded from the formula.

Table 29. Summary of stepwise regression procedures for taxpayer effort.

Step	Variable Entered	Mult R	Adjust R^2	Std Error	R^2 Change	F	p
1	Taxpayer Capacity	.8111	.6572	1220.6921	.6572	1028.626	.001
2	Overhead Expenditures	.8695	.7552	1031.6509	.0980	827.585	.001
3	Instruct Expend Excl Sal	.8706	.7566	1028.5794	.0014	556.422	.001

The adjusted formula for prediction, based on the unstandardized regression coefficient B, shown in Table 28, is: TAXPAYER EFFORT (Y′) = 411.1571 + (.0058 * TAXPAYER CAPACITY) + (.8362 * OVERHEAD EXPENDITURES).

Summary of Multiple Regression Analysis

The results of the multiple regression analyses for Hypotheses 6 through 10 are summarized in Table 30.

Table 30. Summary of multiple regression results for regression equation Hypotheses 6 through 10 (N=537).

Description	HYPOTHESIS NO.				
	6	7	8	9	10
DEPENDENT VARIABLE	Instruct Expend Excl Salary	Overhead Expenditures	Avg Teacher Salary	Taxpayer Capacity	Taxpayer Effort
PREDICTOR VARIABLES - STANDARDIZED BETA:					
Instruct Expend Excl Sal		.5178	NS*	.1027	-.0613
Overhead Expenditures	.7294		NS	-.3304	.3570
Average Teacher Salary	NS	NS		NS	NS
Taxpayer Capacity	.1850	.3742	NS		.7872
Taxpayer Effort	-.1273	.4815	.0763	.9077	
Community Size	NS	.2249	-.3230	NS	NS
Funding Category	NS	.2979	.5583	NS	NS
CONSTANT (SE)	17.9689	126.2085	694.8256	12325.3066	.8405
SUMMARY:					
R^2	.4945	.6573	.5858	.7194	.7566
Standard Error	236.0014	521.1409	2883.6313	149725.9642	1028.5794
F ($p < .05$)	175.7650	206.5780	253.6610	458.9580	556.4220

*NS = not significant

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Schooling in America has changed significantly since the Industrial Revolution. As education struggled to keep pace with the industrialization sweeping the nation in the mid-1800s, the traditional village schools yielded to the needs of cities to educate masses of children from all walks of life. Tyack (1974) provided an articulate description of the changes that took place, and of the ultimate attempts to apply the urban industrial model to rural education.

The battle over consolidation of rural schools into more "efficient" units has raged since the turn of the century. A search of the literature yielded little research to support either side in the emotional debate over the effectiveness and cost of small and rural schools. The authorities and students of rural education — Bruce Barker, Faith Dunne, Paul Nachtigal, Jonathan Sher, and David Tyack — speak with one voice of the critical need for high quality research on small and rural schools.

We currently know little about rural schooling. Researchers do not agree on the definitions for rural or small schools (NRSSC, 1986; Rios, 1988), nor is there consensus on optimum school size (Deighton, 1971; Sher & Schaller, 1986). Isolation adds a complex dimension to rural schooling, and little research has been done to untangle the web (Bass, 1990; Verstegen, 1990).

The revenue components of schools are annually examined in the public and political arenas, because public schools are largely dependent on property taxes (ACIR, 1989; Montana OPI, 1989). But reports and recommendations to policymakers are replete with "common wisdom," traditional values, and assumptions concerning consolidation, school size economies, and benefits of large or small schools (Chance, 1986; Merrill, 1986; Montana Board of Public Education; 1987; Sher & Schaller, 1986).

School funding systems across the nation are currently under legal challenge on grounds that the disparities in expenditures and wealth render the education systems inequitable (Mitang, 1989). The resolution of these lawsuits requires more than "common wisdom." Disparities that are educationally relevant are cited as acceptable (*Helena Elementary School District et al. v. State of Montana et al.,* 1989), but "educationally relevant" data are not at hand, particularly in relation to rural schools.

This study contributed knowledge to the rural education research base by examining fiscal and economic characteristics of school districts in an

extremely rural state, and investigated differences or relationships that exist among those districts. The districts were grouped by community size, using descriptors for mid-size city, large town, small town, and rural that have been applied nationally in 1989 by the U.S. Department of Education, using U.S. Census Bureau definitions (NCES, 1989). Because so many of Montana's school districts are rural (84%), this study subdivided the rural category into three groups: extreme rural isolated (20 miles or farther from another school and enrolling fewer than 200 elementary and 100 high school students), extreme rural (not isolated, with fewer than 200 elementary and 100 high school students), and small rural (the remaining districts in the rural category). The application of community size definitions assigned to schools nationwide may allow the results of this study to be additive and comparative.

All of Montana's 537 operating public school districts in school year 1988-89 were used in this study, treating this group as a sample of small and rural schools in the nation. Montana is extremely rural with a population of 5.54 persons per square mile and 1.05 public school students per square mile (NCES, 1989). The districts in Montana are organized separately as either elementary or secondary, and were studied in those categories.

The 537 school districts in this study included 163 high school and 374 elementary districts. Three percent of the districts were classified as mid-size city, 1% as large town, 12% as small town, 18% as small rural, 34% as

extreme rural, and 31% as extreme rural isolated. The student enrollment in each of those groups does not parallel the district percentages; 21% of the students were in the mid-size city category, 11% in large town, 39% in small town, 17% in small rural, 7% extreme rural, and 5% extreme rural isolated (Montana OPI, 1989).

The data for this study were procured from the Montana Office of Public Instruction, using the 1988-89 school district database derived from district annual reports. The Montana OPI also provided the school community-size classification developed by the National Center for Education Statistics, U.S. Department of Education.

The school district fiscal and economic characteristics in this study included: (1) per student instructional expenditures; (2) per student instructional expenditures excluding salaries and benefits; (3) per student overhead expenditures; (4) school district average teacher salary; (5) per student taxable valuation, identified as taxpayer capacity; (6) per student local levy amounts, identified as taxpayer effort; and (7) the foundation program funding category for the district.

The hypotheses in this study were divided into two groups. A two-way analysis of variance was applied to the first set of five hypotheses to examine the relationship of community size and instructional level with five individual economic and fiscal characteristics of school districts. A planned comparison of simple main effects was used to examine significant main

effects for community size, and post hoc Newman-Keuls procedures were also employed. Multiple regression analysis was applied to the second set of five hypotheses to explore the effects of six predictor variables on an independent variable. A .05 level of significance was used throughout the study.

General findings include:

(1) The two-way ANOVA indicated that taxpayer capacity was the only one of five fiscal variables which appeared to be randomly distributed and not significantly related to community size or instructional level. The means for the other four variables — instructional expenditures, overhead expenditures, average teacher salary, and taxpayer effort — were significantly higher for the high school level than for the elementary.

(2) A planned comparison of simple main effects was used to determine which pairs of community size means were significantly different, given a significant interaction for instruction expenditures, overhead expenditures, and average teacher salary. The means for community size groups of small town, extreme rural, and extreme rural isolated were significantly higher for high schools for all three fiscal characteristics. Mid-size city means were significantly higher at the high school level only for average teacher salary; large town and small rural means were significantly higher at the high school level for instructional and overhead expenditures, but not for average teacher salary.

(3) The Newman-Keuls post hoc procedure, used to locate specific differences between pairs of means, indicated the two extreme rural community size groups were significantly higher than at least one other community size group in instructional expenditures, overhead expenditures, and taxpayer effort, and significantly lower in average teacher salary. For all four of those variables, the extreme rural high school districts were significantly higher than the extreme rural elementary districts. Taxpayer capacity was not significantly different at the .05 level.

(4) The multiple regression analysis indicated that taxpayer effort and taxpayer capacity were highly correlated. Overhead expenditures and instructional expenditures were also highly correlated, although overhead expenditures appear to be a function of a complex set of factors. Average teacher salary did not contribute to the explanation of other fiscal factors. However, community size and funding category did contribute to the explanation of the variation in average teacher salary. Both community size and funding category also displayed a significant relationship to overhead expenditures, but exerted less influence than three other variables.

The general results of the analyses in this research were used to answer the general questions raised earlier in this study:

General question 1. *Do rural school districts share characteristics that differentiate them from other school districts? What characteristics are shared? What characteristics are different?*

Rural districts share with other community size districts a significantly higher taxpayer effort for high school districts than for elementary districts. They also share with other groups a level of taxpayer capacity to provide funds that is not significantly different for any community size group.

It appears from this study that two of the rural groups of school districts, those with high school districts smaller than 100 students and elementary districts smaller than 200, share some characteristics that significantly differentiate them from other community group districts. They had significantly higher instructional expenditures and taxpayer effort than the larger rural schools in this study. They also were significantly higher than the small town districts for both instructional and overhead expenditures.

General question 2. *Does the degree of local wealth affect local taxpayer effort to support schools?*

This study indicates that the level of local wealth strongly influences the level of taxpayer effort to support schools. Nearly two-thirds of the differences in taxpayer effort could be attributed to the level of local taxpayer capacity to provide funds.

General question 3. *Does local wealth contribute to expenditure differences between school districts?*

The results of this study showed that some portion of the school district differences in overhead and instructional expenditures was significantly related to taxpayer capacity, and that other factors, including the level of taxpayer effort and other expenditures, also contributed significantly.

General question 4. *What factors influence the level of instructional expenditures, overhead expenditures, teachers' salaries, and local taxpayer support of schools?*

Instructional expenditures, overhead expenditures, and taxpayer effort were all significantly influenced by each other and by taxpayer capacity. Teachers' salaries appear to respond to different influences; the most significant influences on the level of average teacher salary were funding category and community size.

General question 5. *Can changes be predicted for fiscal characteristics of school districts based on other financial modifications?*

This study yielded equations for expenditures and taxpayer effort that may predict the extent of change in one of those factors if an influencing factor in the formula should change. Those equations will have to be tested to determine their usefulness.

Conclusions

The conclusions that were drawn from the research and statistical analyses of this study include:

(1) *The ability of taxpayers to support schools, measured as district taxable valuation divided by enrolled students, is randomly distributed across school districts and is not significantly related to the size of community or instructional level.*

Taxpayer capacity was the only one of five fiscal variables tested with a two-way analysis of variance that was not significantly related to size of community or instructional level. Although observation of the data indicates the per student taxable valuation ranges from $103 to $5.8 million, the disparities appear to be randomly scattered across districts. This may be consistent with Jonathan Sher's observation (1977) that even in states with few districts, the wealth disparities are as wide as in states with many districts.

(2) *The amount taxpayers provide to local school districts is highly dependent upon the degree of local taxpayer wealth.*

The multiple regression analysis in this study found that 65.7% of the variation in the amount taxpayers provide for local schools can be attributed to taxpayer capacity. This relationship between wealth and effort was cited by Judge Loble (*Helena Elementary School District et al. v. State of Montana et al.,* 1989) as a contributor to his 1988 decision that the Montana public school funding program was unconstitutional. The results of this study agree that the wealth of a district strongly influences the level of local financial support. A comparison of the results of this study, using fiscal 1989 data

from the old funding system, to the fiscal 1991 data from the new funding system, may provide a measure of adjustment in the system, but must include an analysis of the change in the financial support from the state as well.

(3) *High school district per student instruction expenditures, overhead expenditures, average teacher salary, and local taxpayer effort are significantly higher than for elementary districts, with some community size exceptions. In the mid-size city category, high school districts did not differ significantly from elementary districts in overhead and instructional expenditures; large town and small rural categories did not differ for average teacher salary.*

The means for the four variables — instructional expenditures, overhead expenditures, average teacher salary, and taxpayer effort — were tested with a two-way analysis of variance to determine the impact of community size and instructional level. In all four instances, the overall means for the high school districts were significantly higher than the means for the elementary districts. No significant interaction was present for taxpayer effort.

A planned comparison of simple main effects was used to determine which pairs of community size means were significantly different, given a significant interaction for instruction expenditures, overhead expenditures, and average teacher salary. That comparison of simple main effects

determined that the community size means of small town, extreme rural, and extreme rural isolated were significantly higher for high schools for instructional expenditures, overhead expenditures, and average teacher salary. Large town and small rural means were significantly higher for high school for instructional expenditures and overhead expenditures, but not for average teacher salary. Mid-size city means were only significantly higher for average teacher salary. The small number of cell means for large town (6), and for mid-size city (18) may reduce the usefulness or strength of any conclusions that may be drawn concerning those community size districts.

(4) *The rural districts with fewer than 100 high school students and 200 elementary students were the only groups that differed significantly from at least one other school district community size group on each of four fiscal characteristics in this study: instructional expenditures, overhead expenditures, average teacher salary, and taxpayer effort. For all four characteristics, the means for those rural high school districts were significantly higher than the elementary.*

The post hoc Newman-Keuls results revealed that the extreme rural and extreme rural isolated group means were significantly higher than the small rural group for instructional expenditures and tax effort, significantly higher than small town for instructional and overhead expenditures, and significantly different from all other groups, including each other, for average teacher salary.

The test for simple main effects indicated that for all four variables the extreme rural high school groups were significantly higher than the elementary. Although graphs and observations of the means indicated the differences lie with the extreme rural high schools and not the elementary districts, the statistical procedures of this study did not test that effect.

While this would appear to lend support to the traditional arguments of greater economy of operation of larger school districts (Burrup & Brimley, 1982), it also should provide a stimulus for further research. This study does not recognize or explore the reasons the variables are significantly different. This study also does not explore the costs incurred when the structure of districts changes, nor does it inquire beyond the fiscal components of education. As Kaagan and Coley (1989) pointed out, fiscal resources are but one indicator of public school health.

(5) *Instructional expenditures, which exclude salaries and benefits, and overhead expenditures exert strong positive influences on each other, although the level of overhead expenditures appears to be a result of a more complex interaction of factors.*

The multiple regression analyses for overhead expenditures and instructional expenditures excluding salaries showed a strong correlation between the two variables, i.e., Beta = .7294 for the influence of overhead expenditures on instructional expenditures, and Beta = .5178 for the influence of instructional expenditures on overhead expenditures. Two other variables,

taxpayer effort and taxpayer capacity, also significantly impacted instructional expenditures, but exerted much less influence. However, in the regression equation for overhead expenditures, in addition to the impact of instructional expenditures, four other variables exerted influence, with taxpayer effort (Beta = .4815) exerting almost as much influence as instructional expenditures excluding salaries. Taxpayer capacity also exerted influence on overhead expenditures, but that impact was less than either instructional expenditures or taxpayer effort. Jewell (1990) reported taxpayer effort and taxpayer capacity as the major influences on expenditures, which differs from the results of this study. However, Jewell used general expenditures whereas this study used specific classes of expenditures.

The test of simple main effects applied to the significant main effects for community size indicated that significant differences between elementary and high school districts followed the same pattern for both instructional and overhead expenditures; all community size groups except mid-size city were significantly different.

(6) *School district average teacher salary is a function of local community decisions, and not of fiscal characteristics of the district.*

The multiple regression analyses revealed that average teacher salary was the only predictor variable which did not contribute significantly to any of the regression equations of the other variables. None of the fiscal

variables contributed to explanation of the variation in average teacher salary. Only community size and funding level, which are both generally representative of the size of a community, exerted significant influence on the regression equation for average teacher salary.

A two-way analysis of variance determined that average teacher salary was significantly lower overall at the elementary level than the high school. That agrees with findings from the Montana Office of Public Instruction (1989) and the National Education Association (1991). However, the NEA has cautioned that the differences in salary between elementary and secondary teachers result from factors that vary from state to state and district to district, and are not a function of pay by grade level.

The test of simple main effects determined that average teacher salary was significantly higher at the high school level than elementary level for all community size groups except large city and small town. The preponderance of female teachers at the elementary level (Montana OPI, 1989; NEA, 1991) may impact these data because of the "stopping out" of female teachers for family reasons, thereby reducing their years of experience.

The graph of means for average teacher salary (Figure 3) is radically different from the graphs for instructional and overhead expenditures. The lowest points on the graph for average teacher salary are for the extreme rural and extreme rural isolated groups, while on the expenditure graphs the highest points belong to those groups. This may disagree with Jewell's

(1990) findings that 63% of the variation in average expenditures is accounted for by variations in average teachers' salaries. Further research would be needed to compare his methods of study with this study.

The post hoc Newman-Keuls also revealed different results for average teacher salary than for the other variables tested. Thirteen of the 15 community size group pairs tested by this procedure differed significantly for average teacher salary, further confirming the NEA (1991) suggestion that state average salaries mask local differences. The only two groups which did not differ significantly were (1) mid-size city and small rural and (2) large town and small town.

Recommendations for Practice

The regression equations from this study (developed and discussed in Chapter 4), as adjusted for practical significance, should be applied to the 1990 and 1991 school district data to determine potential predictive value of the equations, and to assist policymakers and district administrators with information on the implications of change. The equations recommended for use are:

(1) INSTRUCTIONAL EXPENDITURES EXCLUDING SALARIES AND BENEFITS (Y') = 187.1258 + (.2720 * OVERHEAD EXPENDITURES)

(2) OVERHEAD EXPENDITURES (Y') = -928.6371 + (1.3886 * INSTRUCTIONAL EXPENDITURES EXCLUDING SALARIES) + (73.9924 * FUNDING CATEGORY) + (161.6814 * COMMUNITY SIZE) + (.2056 * TAXPAYER EFFORT) - (.0012 * TAXPAYER CAPACITY)

(3) TAXPAYER EFFORT (Y′) = 411.1571 + (.0058 * TAXPAYER CAPACITY) + (.8362 * OVERHEAD EXPENDITURES)

Recommendations for Study

As this study drew to a close, the experience of my father from 40 years ago took on very personal meaning. A carpenter, he finally built a house for himself, and on the day it was finished, he looked around and sighed, "If I could begin now, I'd do it differently."

Based on experience from this research, the following studies are recommended to extend the findings of this research and to increase the small and rural school knowledge base:

(1) The limitations of the study should be minimized by replication of the study in another rural state to determine which significant findings may be specific to state structure and which may be generalized. Reliable transportation cost data should be included in the study. The impact of non-verification of data at the district level should have minimal impact unless audits discover major reporting deficiencies in several districts.

(2) Additional predictor variables should be added to those used in the multiple regression analysis, and average teacher salary should be removed since it does not contribute significantly to the results of the study. Fiscal components to be added include: instructional

expenditures which include salaries and benefits; state equalization payments per student, including the per student amount of guaranteed tax base aid, to add the degree of state funding; "flat tax" revenue, because a dramatic change in taxable valuation created a revenue shift for school districts; total per student expenditures for specified funds, to include expenditures beyond instruction and overhead; and transportation costs, when comparable reporting provides relevant data.

(3) This study should be replicated using fiscal 1991 Montana school district data to study the impact of significant fiscal and program change. If additional fiscal 1991 variables are introduced, those same variables should be included for fiscal 1989 and the data in this study re-evaluated.

(4) The multiple regression analysis should be repeated using assumptions of cause-effect linkage for hierarchical inclusion of variables into the equation to compare the results with the standard regression method used in this study. Though some of the variables may have a cause-effect linkage, little research was available to support assumptions for inclusion of school district fiscal characteristics in causal order.

(5) Further study should be done to confirm or discount the findings of this study that 65.7% of the variation in the amount taxpayers provide for local schools is due to the level of the available taxable valuation. These findings have sobering implications for equalization questions.

(6) Further study should be done to determine the influence of overhead and instructional expenditures on each other, and the impact of required increases in costs for either instruction or overhead items. The strong positive correlation between overhead expenditures and instructional expenditures excluding salaries may indicate that resources are prorated between both expenditure areas, based on availability of funds, without priority of one area over another. Required program change might change local district ability to prorate available funds and therefore unbalance the predictive equation.

(7) Community fiscal and sociological factors should be studied to determine the relationship of average teacher salary to locale mores, per capita income, and community economic base — whether farming, mining, ranching, or recreational. The significant relationship of average teacher salary to district community size and funding level, but not to other fiscal factors in the study, may indicate an independence of the level of salary from school fiscal factors and a dependence on local factors.

(8) Further study should be done of school district expenditures to determine the components that are significantly different for high school districts than for elementary districts, and to assess the differences between districts based on community size and location.

(9) The multiple regression residuals should be examined to determine the effect of outliers or deviant cases and to detect possible cases of lack of linearity.

BIBLIOGRAPHY

BIBLIOGRAPHY

Abstracts: Research in rural education. (1988, Spring). Journal of Rural and Small Schools, 2, 36-37.

Administrative Rules of Montana. (1990). Helena, MT: State of Montana.

Advisory Commission on Intergovernmental Relations. (1989). 1986 State fiscal capacity and effort. Washington, DC: Author.

Augustus F. Hawkins-Robert T. Stafford Elementary and Secondary School Improvement Amendment of 1988. Public Law 100-297, U.S.C. 100th Congress, 28 April 1988.

Barker, B.O. (1985, June). Research and data needs for small/rural schools. Position paper. Washington, DC: National Center for Education Statistics. (ERIC Document Reproduction Service No. ED 257 602).

Barker, B.O. (1987, Spring). The advantages of small schools. Journal of Rural and Small Schools, 1, 5-7.

Barker, B.O., Muse, I.D., & Smith, R.B. (1984-85, Winter). A status report of rural school districts in the United States under 300. The Rural Educator, 6, 1-4.

Barker, B.O., & Stephens, E.R. (1985, May). National rural school research agenda. Report to Interagency Committee on Rural Education and the Department of Education, Washington, DC. (ERIC Document Reproduction Service No. ED 274 508).

Barker, R.G., & Gump, P.V. (1964). Big school, small school. Stanford: Stanford University Press.

Bass, G.R. (1990, Fall). Isolation/sparsity. Journal of Education Finance, 16, 180-191.

Bass, G., & Berman, P. (1979). Federal aid to rural schools: Current patterns and unmet needs. Report prepared for the National Institute of Education. Santa Monica, CA: Rand.

Bell, T.H. (1983, August). Rural education and rural family education policy for the 80s. Policy issuance. Washington, DC: Department of Education.

Biniaminov, I., & Glasman, N. (1983, Summer). School determinants of student achievement in secondary education. American Educational Research Journal, 20, 251-268.

Brown, D.L., & Deavers, K.L. (1988, October). Economic dimensions of rural America. Paper presented at the Rural Development Policy Option Workshop, Reno, NV, 11-13 October 1988.

Burrup, P.E., & Brimley, V., Jr. (1982). Financing education in a climate of change. Boston: Allyn & Bacon, Inc.

Carlson, R.V. (1989, Spring). Rural education research: A university perspective. The Rural Educator, 10, 3-4.

Chance, W. (1986). '. . . the best of educations' -- Reforming America's public schools in the 1980's. Chicago: John D. & Catherine T. MacArthur Foundation.

Clarke, A.S. (1985, May). The relationship between the size of high school and college success for students graduating from Montana high schools and attending Montana State University. Unpublished doctoral dissertation, Montana State University, Bozeman.

Cole, B. (1988, October). Teaching in a time machine: The 'make-do' mentality in small-town schools. Phi Delta Kappa, 70, 139-144.

Committee on Rural Education. (1983). Definitions of rural education. Washington, DC: U.S. Department of Education.

Cousins, J. (1983, December). Rural school communities in Colorado. Unpublished research report. (ERIC Document Reproduction Service No. ED 239 800).

Davis, J. (1987, Fall). Rurality and isolation in education. The Rural Educator, 9, 11-14.

Deighton, L.C. (Ed. in Chief). (1971). Encyclopaedia of Education (Vol. 7). New York: The MacMillan Company and the Free Press.

DeYoung, A.J. (1984, Summer). The status of American rural education research: An integrated review and commentary. Review of Educational Research, 57, 123-148.

Dunne, F., & Carlsen, W.S. (1981). Small rural schools in the United States: A statistical profile. Washington, DC: The Small Schools Project, The National Rural Center, U.S. Department of Education. (ERIC Document Reproduction Service No. ED 206 436).

Ellis, P. (1986, September). Little reason for being: A case of school district dissolution. Ithaca, NY: College of Agriculture and Life Sciences, Cornell University, State University of New York. (ERIC Document Reproduction Service No. ED 287 625).

Ferguson, G.A. (1981). Statistical analysis in psychology and education. New York: McGraw-Hill Book Co.

Gardiner, C.E. (1983-84, Winter). A survey of rural schools in Montana. The Rural Educator, 5, 18-21.

Gay, L.R. (1987). Educational research. Columbus, OH: Merrill Publishing Co.

Gjelten, T. (1978). Schooling in isolated communities. Portland, ME: North Haven Project.

Graves, F.F. (1989, May). Request for proposal No. 89-054. Washington, DC: U.S. Department of Education, 16 May 1989.

Green, G., & Stevens, W. (1988, Fall). What research says about small schools. The Rural Educator, 10, 9-14.

Helena Elementary School District No. 1 et al. v. State of Montana et al., 769 P.2D 684 (Mont 1989).

Hill, A. (1987, Fall). ERIC: In a nutshell. Journal of Rural and Small Schools, 1, 19-21.

Hobbs, D., Hefferman, W., & Tweeten, L. (1988, October). Education, retraining and relocation policy. Paper presented at the Rural Development Policy Option Workshop, Reno, NV, 11-13 October 1988.

Howley, C. (1988, December). Economic support for education in rural school districts. ERIC/CRESS Digest. (ERIC Document Reproduction Service No. ED 308 059).

Hubel, K. (1986, October). National Rural Education Association research agenda report. Fort Collins, CO: National Rural Education Association. (ERIC Document Reproduction Service No. ED 275 471).

Jewell, R.W. (1990). State comparisons in public school spending. Administrator's Notebook [The University of Chicago], XXXIV, 2.

Kaagan, S.S., & Coley, R.J. (1989). State education indicators: Measured strides, missing steps. Princeton, NJ: Educational Testing Service.

Kerlinger, F.N., & Pedhazur, E.J. (1973). Multiple regression in behavioral research. New York: Holt, Rinehart & Winston, Inc.

Koehler, L. (Ed.). (1987, December). Rural student achievement: Elements for consideration. ERIC/CRESS Digest. (ERIC Document Reproduction Service No. ED 289 658).

Long, T.J., Convey, J.J., & Chwalek, A.R. (1986). Completing dissertations in the behavioral sciences and education. San Francisco: Jossey-Bass Publishers.

Marshall, D.G. (1986, October). From rhetoric to action: Approaches to small schools for the coming decade. Keynote speech presented at the National Symposium in Small Schools, Atikokan, Ontario.

McIntire, W.G. (1989, Spring). The quality of research: An editor's perspective. The Rural Educator, 10, 5-6.

Merrill, A. (1982, May). Proposed foundation program for nonisolated high school districts. Report to the Legislative Joint Subcommittee on Education, 26 May 1982. Helena, MT: Montana Legislative Council.

Merrill, A. (1986, October). School funding mechanisms related to school size and school district insurance funding. Report to the School Funding Subcommittee of the Legislative Finance Committee. Helena, MT: Montana Legislative Council.

Merrill, E.C. (1965). School district reorganization: Implications for financial support. Trends in Finance in Public Education. Washington, DC: National Education Association.

Mitang, L. (1989, August 27). Many states earn F in finance. The Missoulian [Missoula, MT], p. B5.

Monk, D.H., & Haller, E.J. (1986, December). Organizational alternatives for small rural schools. Final report to the legislature of the State of New York. Ithaca, NY: Cornell University, Department of Education.

Montana Board of Public Education. (1987). A report to the fiftieth legislature: A response to Senate Bill 15. Helena, MT: Author.

Montana Codes Annotated. (1989). Helena, MT: State of Montana.

Montana Department of Labor and Industry, Research and Analysis Division. (1988, June). Annual planning information, calendar year 1989. Helena, MT: State of Montana.

Montana Legislature, House Education and Cultural Resources Committee. (1987, 1989, 1991). Committee Minutes. Helena, MT: Author.

Montana Office of Public Instruction. (1989). Public school district databases, 1988-89 and 1989-90. Unpublished data. Helena, MT: Montana OPI.

Nachtigal, P.M. (1988, October). Redesigning education in rural areas. The Generational Journal, 1(3), 5-8.

National Center for Education Statistics. (1989, May). Assigning type of locale codes to the 1987-88 CCD public school universe. Technical report. Washington, DC: U.S. Department of Education.

National Education Association. (1991). Estimates of school statistics, 1991. West Haven, CT: Research Division, NEA.

National Institute of Education. (1985, November). The McREL Rural Education Project: A summary report of its history and accomplishments. Aurora, CO: Mid-Continent Regional Education Lab.

National rural development institutional organization chart. (1986, Fall). Journal of Rural and Small Schools, 1, 30.

National Rural and Small School Consortium. (1986, October). Definitions of rural, small, and remote schools. Bellingham, WA: Western Washington University.

National Rural, Small Schools Task Force. (1988, May). End of the road: Rural America's poor students and poor schools. Washington, DC: Council for Education Development and Research, Inc.

Nelson, F.H. (1989, July). Survey and analysis of salary trends, 1989. Washington, DC: American Federation of Teachers, AFL-CIO.

Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K., & Bent, D.H. (1975). SPSS (2nd ed.). New York: McGraw-Hill, Inc.

Nielson, D. (1990, March). Montana public school organization status report, school year 1989-90. Report to the Legislative Oversight Committee on House Bill 28 Implementation. Helena, MT: Office of Public Instruction.

Office of Education Research and Improvement. (1989, May). Rural education: A changing landscape. Washington, DC: U.S. Department of Education.

Pucciano, J. [interviewed]. (1987, Spring). U.S. Department of Education: A renewed commitment to rural education. Journal of Rural and Small Schools, 1, 2-4.

Research Associates of Washington. (1988, July). State profiles: Financing public higher education, 1978 to 1988. Washington, DC: Author.

Richter, A.J. (1986, October). The impact of the rural recession on public school financing and programs. Search. Washington, DC: National Education Association.

Rincones, R. (1988, January). Rural education: Exploring alternatives to consolidation. ERIC Digest. (ERIC Document Reproduction Service No. ED 296 817).

Rios, B.R.D. (1988, March). "Rural" -- a concept beyond definition? ERIC Digest. (ERIC Document Reproduction Service No. ED 296 820).

Schneider, E.J. (1989, Winter). Congress responds to suggestion rural schools need federal help. Journal of Rural and Small Schools, 3, 52-53.

School size: A reassessment of the small school (Research Action Brief No. 21). (1982, February). Eugene, OR: ERIC Clearinghouse on Educational Management.

Sher, J. (1988, Winter). Why rural education has not received its 'fair shair' of funding -- and what to do about it. Journal of Rural and Small Schools, 2, 31-37.

Sher, J.P. (Ed.). (1977). Education in rural America: A reassessment of conventional wisdom. Boulder, CO: Westview Press.

Sher, J.P., & Schaller, K. (1986, April). Heavy meddle: A critique of the North Carolina Department of Public Instruction's plan to mandate school district mergers throughout the state. Chapel Hill, NC: Rural Education and Development, Inc. (ERIC Document Reproduction Service No. ED 270 245).

Theobald, P. (1988, Summer). Democracy and the origins of rural midwest education: A retrospective essay. Educational Theory, 38, 363-367.

Thompson, J.A., & Correa, L.H. (1989, Winter). A study of school and teacher inputs on student achievement outputs. Journal of Education Finance, 14, 390-406.

Thomson, J. (1990, September). Montana public school transportation status report. Report to the Legislative Oversight Committee on House Bill 28 implementation. Helena, MT: Montana Office of Public Instruction.

Tyack, D.B. (1974). The one best system. Cambridge: Harvard University Press.

Uerling, D.F. (1986, Spring). School district consolidation: Selected educational implications. The Rural Educator, 7, 20-22.

Verstegen, D.A. (1990, Fall). Efficiency and economies-of-scale revisited: Implications for financing rural school districts. Journal of Education Finance, 16, 159-179.

Whitaker, W.H. (1982, July). The many faces of Ehraim: In search of a functional typology of rural areas. Orono, ME: Maine University. (ERIC Document Reproduction Service No. ED 242 459).

WICHE. Montana: State profile. Pamphlet. 1989.

White, F., & Tweeten, L. (1973, February). Optimal school district size emphasizing rural areas. American Journal of Agricultural Economics, 55, 45-53.

Williams, R.L., & Cross, W.K. (1987, Fall). Preparing rural teachers in Canada. The Rural Educator, 9, 22-25.

Wise, A.E. (1968). Rich schools, poor schools: The promise of equal educational opportunity. Chicago: The University of Chicago Press.

Wise, A.E., & Gendler, T. (1989, Spring). Rich schools, poor schools: The persistence of unequal education. The College Board Review (151), 12-17, 36-37.

APPENDICES

APPENDIX A

MONTANA PUBLIC SCHOOL CATEGORIES

SCHOOL YEAR 1988-89

Table 31. Montana public school categories, school year 1988-89.

COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
BEAVERHEAD	0003	GRANT ELEM	3	6	1
BEAVERHEAD	0005	DILLON ELEM	7	3	1
BEAVERHEAD	0006	BEAVERHEAD CO HS	13	3	2
BEAVERHEAD	0007	WISE RIVER ELEM	3	6	1
BEAVERHEAD	0008	LIMA ELEM	4	6	1
BEAVERHEAD	0009	LIMA H S	9	6	2
BEAVERHEAD	0010	WISDOM ELEM	3	5	1
BEAVERHEAD	0012	POLARIS ELEM	1	6	1
BEAVERHEAD	0014	JACKSON ELEM	3	5	1
BEAVERHEAD	0015	REICHLE ELEM	3	5	1
BIG HORN	0020	SQUIRREL CRK ELEM	2	6	1
BIG HORN	0021	PRYOR ELEM	4	6	1
BIG HORN	0022	COMMUNITY ELEM	3	5	1
BIG HORN	0023	HARDIN ELEM	7	3	1
BIG HORN	0024	BIG BEND ELEM	1	6	1
BIG HORN	0025	LODGE GRASS ELEM	7	4	1
BIG HORN	0026	WYOLA ELEM	4	5	1
BIG HORN	1189	HARDIN H S	13	3	2
BIG HORN	1190	LODGE GRASS H S	11	4	2
BIG HORN	1214	PLENTY COUPS HS	10	6	2
BLAINE	0028	CHINOOK ELEM	7	4	1
BLAINE	0029	CHINOOK H S	11	4	2
BLAINE	0030	HARLEM ELEM	7	4	1
BLAINE	0031	HARLEM H S	11	4	2
BLAINE	0032	CLEVELAND ELEM	2	6	1
BLAINE	0034	ZURICH ELEM	4	5	1
BLAINE	0036	LLOYD ELEM	2	6	1
BLAINE	0043	COW ISLAND TRAIL ELEM	1	6	1
BLAINE	0044	TURNER ELEM	4	6	1
BLAINE	0045	TURNER H S	9	6	2
BLAINE	0046	HAYS-LODGE POLE ELEM	5	6	1
BLAINE	0048	BEAR PAW ELEM	3	5	1
BLAINE	1213	HAYS-LODGE POLE H S	10	6	2
BLAINE	1216	N HARLEM COLONY ELEM	1	5	1
BROADWATER	0050	TOWNSEND ELEM	7	4	1
BROADWATER	0053	TOSTON ELEM	2	5	1
BROADWATER	0055	BROADWATER CO HS	12	4	2
CARBON	0056	RED LODGE ELEM	7	4	1
CARBON	0057	RED LODGE H S	11	4	2
CARBON	0058	BRIDGER ELEM	5	5	1
CARBON	0059	BRIDGER H S	10	5	2
CARBON	0060	JOLIET ELEM	6	4	1
CARBON	0061	JOLIET H S	10	5	2
CARBON	0063	JACKSON ELEM	3	5	1
CARBON	0064	LUTHER ELEM	3	5	1
CARBON	0068	ROBERTS ELEM	4	5	1
CARBON	0069	ROBERTS H S	9	5	2
CARBON	0070	BOYD ELEM	3	5	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
05	CARBON	0071	FROMBERG ELEM	5	5	1
05	CARBON	0072	FROMBERG H S	10	5	2
05	CARBON	0073	EDGAR ELEM	3	5	1
05	CARBON	0075	BELFRY ELEM	5	5	1
05	CARBON	0076	BELFRY H S	9	5	2
06	CARTER	0078	HAMMOND-BOX ELDER EL	2	6	1
06	CARTER	0083	JOHNSTON ELEM	1	6	1
06	CARTER	0085	ALBION ELEM	2	6	1
06	CARTER	0086	PINE HILL-PLAINVW EL	2	6	1
06	CARTER	0087	EKALAKA ELEM	4	6	1
06	CARTER	0090	RIDGE ELEM	1	6	1
06	CARTER	0096	ALZADA ELEM	2	6	1
06	CARTER	0097	CARTER CO H S	10	6	2
07	CASCADE	0098	GREAT FALLS EL	7	1	1
07	CASCADE	0099	GREAT FALLS H S	14	1	2
07	CASCADE	0101	CASCADE ELEM	5	6	1
07	CASCADE	0102	CASCADE H S	11	4	2
07	CASCADE	0104	CENTERVILLE EL	6	4	1
07	CASCADE	0105	CENTERVILLE H S	10	5	2
07	CASCADE	0112	BELT ELEM	6	4	1
07	CASCADE	0113	BELT H S	11	6	2
07	CASCADE	0118	SUN RIVER VALLEY HS	11	4	2
07	CASCADE	0127	VAUGHN ELEM	5	1	1
07	CASCADE	0131	ULM ELEM	4	1	1
07	CASCADE	1195	DEEP CREEK ELEM	2	5	1
07	CASCADE	1225	SUN RIVER VALLEY ELEM	6	4	1
08	CHOUTEAU	0133	FT BENTON ELEM	7	4	1
08	CHOUTEAU	0134	FT BENTON H S	11	4	2
08	CHOUTEAU	0135	LOMA ELEM	1	5	1
08	CHOUTEAU	0137	BIG SANDY ELEM	6	4	1
08	CHOUTEAU	0138	BIG SANDY H S	11	4	2
08	CHOUTEAU	0144	WARRICK ELEM	1	6	1
08	CHOUTEAU	0145	HIGHWOOD ELEM	4	6	1
08	CHOUTEAU	0146	HIGHWOOD H S	9	6	2
08	CHOUTEAU	0153	GERALDINE ELEM	5	6	1
08	CHOUTEAU	0154	GERALDINE H S	10	6	2
08	CHOUTEAU	0159	CARTER ELEM	1	5	1
08	CHOUTEAU	0161	KNEES ELEM	2	6	1
08	CHOUTEAU	0171	BENTON LAKE EL	2	6	1
09	CUSTER	0172	MILES CITY ELEM	7	3	1
09	CUSTER	0173	KIRCHER ELEM	4	5	1
09	CUSTER	0176	GARLAND ELEM	2	6	1
09	CUSTER	0177	TRAIL CREEK EL	1	6	1
09	CUSTER	0179	HKT-BASIN SPR CRK EL	2	6	1
09	CUSTER	0182	COTTONWOOD EL	3	6	1
09	CUSTER	0183	WHITNEY CRK EL	1	6	1
09	CUSTER	0184	MOON CREEK EL	1	5	1
09	CUSTER	0187	KINSEY ELEM	4	5	1
09	CUSTER	0188	TWIN BUTTES EL	1	6	1
09	CUSTER	0189	S Y ELEM	2	6	1
09	CUSTER	0190	S H-FOSTER CRK ELEM	1	6	1
09	CUSTER	0192	CUSTER CO H S	14	3	2
10	DANIELS	0193	SCOBEY ELEM	6	4	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
10	DANIELS	0194	SCOBEY H S	11	6	2
10	DANIELS	0195	PEERLESS ELEM	4	6	1
10	DANIELS	0196	PEERLESS H S	9	6	2
10	DANIELS	0199	FLAXVILLE ELEM	4	5	1
10	DANIELS	0200	FLAXVILLE H S	9	6	2
11	DAWSON	0206	GLENDIVE ELEM	7	3	1
11	DAWSON	0207	DAWSON CO H S	13	3	2
11	DAWSON	0211	UPPER CRACKERBOX EL	1	6	1
11	DAWSON	0215	BLOOMFIELD ELEM	3	6	1
11	DAWSON	0216	LINDSAY ELEM	3	6	1
11	DAWSON	0227	RICHEY ELEM	4	6	1
11	DAWSON	0228	RICHEY H S	9	6	2
11	DAWSON	1193	DEER CREEK ELEM	3	5	1
12	DEER LODGE	0236	ANACONDA ELEM	7	3	1
12	DEER LODGE	0237	ANACONDA H S	13	3	2
13	FALLON	0243	BAKER ELEM	7	4	1
13	FALLON	0244	BAKER H S	12	4	2
13	FALLON	0254	FERTILE PRAIRIE EL	1	5	1
13	FALLON	0255	PLEVNA ELEM	4	5	1
13	FALLON	0256	PLEVNA H S	9	5	2
14	FERGUS	0258	LEWISTOWN ELEM	7	3	1
14	FERGUS	0259	FERGUS H S	13	3	2
14	FERGUS	0260	MAIDEN ELEM	2	6	1
14	FERGUS	0263	BROOKS ELEM	2	5	1
14	FERGUS	0264	DEERFIELD ELEM	2	5	1
14	FERGUS	0265	COTTONWOOD ELEM	1	6	1
14	FERGUS	0268	GRASS RANGE EL	4	6	1
14	FERGUS	0269	GRASS RANGE H S	9	6	2
14	FERGUS	0272	KING COLONY EL	1	6	1
14	FERGUS	0273	MOORE ELEM	4	5	1
14	FERGUS	0274	MOORE H S	9	5	2
14	FERGUS	0279	ROY ELEM	4	6	1
14	FERGUS	0280	ROY H S	8	6	2
14	FERGUS	0281	DENTON ELEM	5	6	1
14	FERGUS	0282	DENTON H S	9	6	2
14	FERGUS	0288	SPRING CRK COLONY EL	1	6	1
14	FERGUS	0290	WINIFRED ELEM	4	6	1
14	FERGUS	0291	WINIFRED H S	9	6	2
14	FERGUS	1218	AYERS ELEM	1	6	1
15	FLATHEAD	0307	DEER PARK ELEM	4	5	1
15	FLATHEAD	0308	FAIR-MONT-EGAN ELEM	5	5	1
15	FLATHEAD	0309	SWAN RIVER EL	5	5	1
15	FLATHEAD	0310	KALISPELL ELEM	7	3	1
15	FLATHEAD	0311	FLATHEAD H S	14	3	2
15	FLATHEAD	0312	COLUMBIA FALLS ELEM	7	3	1
15	FLATHEAD	0313	COLUMBIA FALLS H S	14	3	2
15	FLATHEAD	0316	CRESTON ELEM	4	5	1
15	FLATHEAD	0317	CAYUSE PRAIRIE ELEM	5	4	1
15	FLATHEAD	0320	HELENA FLATS EL	5	5	1
15	FLATHEAD	0323	KILA ELEM	4	5	1
15	FLATHEAD	0324	BATAVIA ELEM	4	5	1
15	FLATHEAD	0325	PLEASANT VALLEY ELEM	2	5	1
15	FLATHEAD	0327	SOMERS ELEM	6	4	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
15	FLATHEAD	0330	BIGFORK ELEM	7	4	1
15	FLATHEAD	0331	BIGFORK H S	12	4	2
15	FLATHEAD	0332	BOORMAN ELEM	4	5	1
15	FLATHEAD	0334	WHITEFISH ELEM	7	3	1
15	FLATHEAD	0335	WHITEFISH H S	13	3	2
15	FLATHEAD	0339	EVERGREEN ELEM	7	3	1
15	FLATHEAD	0341	MARION ELEM	4	6	1
15	FLATHEAD	0342	OLNEY-BISSELL ELEM	4	5	1
15	FLATHEAD	0344	MOUNTAIN BROOK ELEM	3	5	1
15	FLATHEAD	1184	WEST VALLEY EL	6	4	1
15	FLATHEAD	1223	WEST GLACIER ELEM	4	6	1
16	GALLATIN	0347	MANHATTAN ELEM	7	4	1
16	GALLATIN	0348	MANHATTAN H S	11	4	2
16	GALLATIN	0350	BOZEMAN ELEM	7	3	1
16	GALLATIN	0351	BOZEMAN H S	14	3	2
16	GALLATIN	0354	WILLOW CREEK EL	3	5	1
16	GALLATIN	0355	WILLOW CREEK HS	8	5	2
16	GALLATIN	0357	SPRINGHILL EL	1	5	1
16	GALLATIN	0359	COTTONWOOD EL	2	5	1
16	GALLATIN	0360	THREE FORKS EL	6	4	1
16	GALLATIN	0361	THREE FORKS H S	11	4	2
16	GALLATIN	0362	PASS CREEK ELEM	2	6	1
16	GALLATIN	0363	MONFORTON EL	5	5	1
16	GALLATIN	0364	GALLATIN GTWY ELEM	5	5	1
16	GALLATIN	0366	ANDERSON ELEM	4	5	1
16	GALLATIN	0367	LA MOTTE ELEM	4	5	1
16	GALLATIN	0368	BELGRADE ELEM	7	3	1
16	GALLATIN	0369	BELGRADE H S	13	3	2
16	GALLATIN	0370	MALMBORG ELEM	2	5	1
16	GALLATIN	0373	W YELLOWSTONE ELEM	5	6	1
16	GALLATIN	0374	W YELLOWSTONE H S	10	6	2
16	GALLATIN	0375	OPHIR ELEM	3	6	1
16	GALLATIN	0376	AMSTERDAM ELEM	4	5	1
17	GARFIELD	0377	JORDAN ELEM	5	6	1
17	GARFIELD	0378	GARFIELD CO H S	10	6	2
17	GARFIELD	0380	BIG DRY CREEK ELEM	2	6	1
17	GARFIELD	0382	VAN NORMAN ELEM	1	6	1
17	GARFIELD	0384	SUTHRLND-COULEE ELEM	1	6	1
17	GARFIELD	0385	PINE GROVE ELEM	1	6	1
17	GARFIELD	0386	KESTER ELEM	1	6	1
17	GARFIELD	0387	COHAGEN ELEM	3	6	1
17	GARFIELD	0388	BENZIEN ELEM	1	6	1
17	GARFIELD	0389	BLACKFOOT ELEM	1	6	1
17	GARFIELD	0392	SAND SPRINGS EL	1	6	1
17	GARFIELD	0394	ROSS ELEM	1	6	1
17	GARFIELD	0395	CAT CREEK ELEM	1	6	1
17	GARFIELD	0396	FLAT CREEK ELEM	1	6	1
18	GLACIER	0400	BROWNING ELEM	7	3	1
18	GLACIER	0401	BROWNING H S	13	3	2
18	GLACIER	0402	CUT BANK ELEM	7	3	1
18	GLACIER	0403	CUT BANK H S	12	3	2
18	GLACIER	0404	E GLACIER PARK ELEM	4	5	1
18	GLACIER	1222	MOUNTAIN VIEW ELEM	3	5	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
19	GOLDEN VALLEY	0406	RYEGATE ELEM	4	5	1
19	GOLDEN VALLEY	0407	RYEGATE H S	9	5	2
19	GOLDEN VALLEY	0410	LAVINA ELEM	4	5	1
19	GOLDEN VALLEY	0411	LAVINA H S	8	5	2
20	GRANITE	0415	PHILIPSBURG EL	5	4	1
20	GRANITE	0416	GRANITE H S	10	6	2
20	GRANITE	0418	HALL ELEM	3	5	1
20	GRANITE	0419	DRUMMOND ELEM	5	6	1
20	GRANITE	0420	DRUMMOND H S	10	6	2
21	HILL	0424	DAVEY ELEM	1	5	1
21	HILL	0425	BOX ELDER ELEM	5	5	1
21	HILL	0426	BOX ELDER H S	10	5	2
21	HILL	0427	HAVRE ELEM	7	3	1
21	HILL	0428	HAVRE H S	14	3	2
21	HILL	0445	COTTONWOOD ELEM	4	6	1
21	HILL	1207	ROCKY BOY ELEM	6	4	1
21	HILL	1208	K-G ELEM	4	5	1
21	HILL	1209	K-G HIGH SCHOOL	9	5	2
21	HILL	1217	GILDFORD COLONY ELEM	2	6	1
21	HILL	1219	BLUE SKY ELEM	5	5	1
21	HILL	1220	BLUE SKY HIGH	9	5	2
22	JEFFERSON	0452	CLANCY ELEM	7	4	1
22	JEFFERSON	0453	WHITEHALL ELEM	7	4	1
22	JEFFERSON	0454	WHITEHALL H S	12	4	2
22	JEFFERSON	0455	BASIN ELEM	2	5	1
22	JEFFERSON	0456	BOULDER ELEM	6	4	1
22	JEFFERSON	0457	JEFFERSON H S	12	4	2
22	JEFFERSON	0458	CARDWELL ELEM	4	5	1
22	JEFFERSON	0460	MONTANA CITY ELEM	5	5	1
23	JUDITH BASIN	0463	STANFORD ELEM	5	5	1
23	JUDITH BASIN	0464	STANFORD H S	10	5	2
23	JUDITH BASIN	0468	HOBSON ELEM	4	5	1
23	JUDITH BASIN	0469	HOBSON H S	10	5	2
23	JUDITH BASIN	0471	RAYNESFORD ELEM	3	5	1
23	JUDITH BASIN	0472	GEYSER ELEM	4	5	1
23	JUDITH BASIN	0473	GEYSER H S	9	5	2
24	LAKE	0474	ARLEE ELEM	7	4	1
24	LAKE	0475	ARLEE H S	11	4	2
24	LAKE	0477	POLSON ELEM	7	3	1
24	LAKE	0478	POLSON H S	13	3	2
24	LAKE	0480	ST IGNATIUS ELEM	7	4	1
24	LAKE	0481	ST IGNATIUS H S	11	4	2
24	LAKE	0483	VALLEY VIEW ELEM	1	5	1
24	LAKE	0486	SWAN LAKE-SALMON ELEM	3	6	1
24	LAKE	1199	RONAN ELEM	7	3	1
24	LAKE	1200	RONAN H S	13	4	2
24	LAKE	1205	CHARLO ELEM	5	4	1
24	LAKE	1206	CHARLO H S	10	5	2
24	LAKE	1211	UPPER WEST SHORE ELEM	3	6	1
25	LEWIS & CLARK	0487	HELENA ELEM	7	3	1
25	LEWIS & CLARK	0488	HELENA H S	14	3	2
25	LEWIS & CLARK	0489	KESSLER ELEM	7	3	1
25	LEWIS & CLARK	0491	TRINITY ELEM	3	6	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
25	LEWIS & CLARK	0492	E HELENA ELEM	7	3	1
25	LEWIS & CLARK	0495	WOLF CREEK ELEM	2	5	1
25	LEWIS & CLARK	0497	CRAIG ELEM	2	5	1
25	LEWIS & CLARK	0498	AUCHARD CRK ELEM	3	6	1
25	LEWIS & CLARK	0501	LINCOLN ELEM	5	6	1
25	LEWIS & CLARK	0502	AUGUSTA ELEM	4	6	1
25	LEWIS & CLARK	0503	AUGUSTA H S	10	6	2
25	LEWIS & CLARK	1221	LINCOLN HIGH SCHOOL	10	6	2
26	LIBERTY	0506	WHITLASH ELEM	2	6	1
26	LIBERTY	0507	J-I ELEM	5	5	1
26	LIBERTY	0508	J-I HIGH SCHOOL	9	5	2
26	LIBERTY	0510	CHESTER ELEM	6	4	1
26	LIBERTY	0511	CHESTER H S	10	4	2
26	LIBERTY	1224	LIBERTY ELEM	2	6	1
27	LINCOLN	0519	TROY ELEM	7	4	1
27	LINCOLN	0520	TROY H S	12	4	2
27	LINCOLN	0521	LIBBY ELEM	7	3	1
27	LINCOLN	0522	LIBBY H S	14	3	2
27	LINCOLN	0527	EUREKA ELEM	7	4	1
27	LINCOLN	0528	LINCOLN CO H S	12	4	2
27	LINCOLN	0529	FORTINE ELEM	4	5	1
27	LINCOLN	0530	MCCORMICK ELEM	3	5	1
27	LINCOLN	0532	SYLVANITE ELEM	3	6	1
27	LINCOLN	0533	YAAK ELEM	3	6	1
27	LINCOLN	0534	TREGO ELEM	4	5	1
28	MADISON	0536	ALDER ELEM	3	5	1
28	MADISON	0537	SHERIDAN ELEM	5	5	1
28	MADISON	0538	SHERIDAN H S	10	5	2
28	MADISON	0539	TWIN BRIDGES ELEM	5	5	1
28	MADISON	0540	TWIN BRIDGES H S	10	5	2
28	MADISON	0542	HARRISON ELEM	4	5	1
28	MADISON	0543	HARRISON H S	9	5	2
28	MADISON	0545	ENNIS ELEM	6	4	1
28	MADISON	0546	ENNIS H S	11	4	2
29	MCCONE	0547	CIRCLE ELEM	6	4	1
29	MCCONE	0548	CIRCLE H S	11	4	2
29	MCCONE	0551	PRAIRIE ELK ELEM	1	6	1
29	MCCONE	0561	BROCKWAY ELEM	3	5	1
29	MCCONE	0562	SOUTHVIEW ELEM	1	6	1
29	MCCONE	0566	VIDA ELEM	3	6	1
30	MEAGHER	0568	LENNEP ELEM	2	6	1
30	MEAGHER	0569	WHT SULPHUR SPGS ELEM	5	6	1
30	MEAGHER	0570	WHT SULPHUR SPGS HS	11	4	2
30	MEAGHER	0574	RINGLING ELEM	1	6	1
31	MINERAL	0575	SALTESE ELEM	1	6	1
31	MINERAL	0576	ALBERTON ELEM	5	6	1
31	MINERAL	0577	ALBERTON H S	10	6	2
31	MINERAL	0578	SUPERIOR ELEM	6	4	1
31	MINERAL	0579	SUPERIOR H S	11	4	2
31	MINERAL	0581	ST REGIS ELEM	5	6	1
31	MINERAL	0582	ST REGIS H S	10	6	2
32	MISSOULA	0583	MISSOULA ELEM	7	2	1
32	MISSOULA	0584	MISSOULA H S	14	2	2

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
32	MISSOULA	0586	HELLGATE ELEM	7	2	1
32	MISSOULA	0588	LOLO ELEM	7	4	1
32	MISSOULA	0589	POTOMAC ELEM	5	5	1
32	MISSOULA	0590	BONNER ELEM	7	4	1
32	MISSOULA	0591	WOODMAN ELEM	4	6	1
32	MISSOULA	0592	DESMET SCHOOL	4	5	1
32	MISSOULA	0593	TARGET RANGE ELEM	7	2	1
32	MISSOULA	0594	SUNSET ELEM	2	5	1
32	MISSOULA	0595	CLINTON ELEM	6	4	1
32	MISSOULA	0596	SWAN VALLEY ELEM	4	6	1
32	MISSOULA	0597	SEELEY LAKE ELEM	5	4	1
32	MISSOULA	0598	FRENCHTOWN ELEM	7	4	1
32	MISSOULA	0599	FRENCHTOWN H S	12	4	2
33	MUSSELSHELL	0600	MUSSELSHELL ELEM	2	5	1
33	MUSSELSHELL	0605	ROUNDUP ELEM	7	4	1
33	MUSSELSHELL	0606	ROUNDUP H S	12	4	2
33	MUSSELSHELL	0607	MELSTONE ELEM	4	6	1
33	MUSSELSHELL	0608	MELSTONE H S	9	6	2
34	PARK	0611	RICHLAND ELEM	2	5	1
34	PARK	0612	LIVINGSTON ELEM	7	3	1
34	PARK	0613	PARK H S	13	3	2
34	PARK	0614	GARDINER ELEM	5	6	1
34	PARK	0620	PINE CREEK ELEM	3	5	1
34	PARK	0626	CLYDE PARK ELEM	4	5	1
34	PARK	0627	CLYDE PARK H S	10	5	2
34	PARK	0630	WILSALL ELEM	4	5	1
34	PARK	0631	WILSALL H S	9	5	2
34	PARK	0635	SPRINGDALE ELEM	2	5	1
34	PARK	1191	GARDINER H S	10	6	2
34	PARK	1215	ARROWHEAD ELEM	4	6	1
35	PETROLEUM	0641	WINNETT ELEM	4	6	1
35	PETROLEUM	0642	WINNETT H S	9	6	2
36	PHILLIPS	0647	DODSON ELEM	4	5	1
36	PHILLIPS	0648	DODSON H S	9	5	2
36	PHILLIPS	0652	SECOND CRK ELEM	1	6	1
36	PHILLIPS	0653	LANDUSKY ELEM	1	6	1
36	PHILLIPS	0654	SUN PRAIRIE ELEM	1	6	1
36	PHILLIPS	0657	SACO H S	9	5	2
36	PHILLIPS	0658	MALTA ELEM	7	3	1
36	PHILLIPS	0659	MALTA H S	12	3	2
36	PHILLIPS	0662	WHITEWATER ELEM	4	6	1
36	PHILLIPS	0663	WHITEWATER H S	8	6	2
36	PHILLIPS	1203	SACO ELEM	4	5	1
37	PONDERA	0670	HEART BUTTE ELEM	5	6	1
37	PONDERA	0671	DUPUYER ELEM	3	5	1
37	PONDERA	0674	CONRAD ELEM	7	3	1
37	PONDERA	0675	CONRAD H S	12	3	2
37	PONDERA	0679	VALIER ELEM	5	6	1
37	PONDERA	0680	VALIER H S	10	6	2
37	PONDERA	0681	BRADY ELEM	4	5	1
37	PONDERA	0682	BRADY H S	8	5	2
37	PONDERA	0684	MIAMI ELEM	3	5	1
38	POWDER RIVER	0690	POWDERVILLE EL	1	6	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
38	POWDER RIVER	0692	BIDDLE ELEM	3	6	1
38	POWDER RIVER	0695	BELLE CREEK EL	2	6	1
38	POWDER RIVER	0702	BILLUP ELEM	1	6	1
38	POWDER RIVER	0705	BROADUS ELEM	6	4	1
38	POWDER RIVER	0706	POWDER RVR CO H S	11	4	2
38	POWDER RIVER	0709	SO STACEY ELEM	1	6	1
38	POWDER RIVER	0711	HORKAN CRK ELEM	2	6	1
39	POWELL	0712	DEER LODGE ELEM	7	3	1
39	POWELL	0713	POWELL CO H S	13	3	2
39	POWELL	0715	OVANDO ELEM	3	5	1
39	POWELL	0717	HELMVILLE ELEM	3	5	1
39	POWELL	0718	GARRISON ELEM	2	5	1
39	POWELL	0719	ELLISTON ELEM	3	5	1
39	POWELL	0720	AVON ELEM	3	5	1
39	POWELL	0721	GOLD CREEK ELEM	3	5	1
40	PRAIRIE	0725	TERRY ELEM	5	6	1
40	PRAIRIE	0726	TERRY H S	11	4	2
40	PRAIRIE	1194	FALLON ELEM	3	5	1
41	RAVALLI	0730	CORVALLIS ELEM	7	4	1
41	RAVALLI	0731	CORVALLIS H S	12	4	2
41	RAVALLI	0732	STEVENSVILLE EL	7	3	1
41	RAVALLI	0733	STEVENSVILLE HS	13	3	2
41	RAVALLI	0734	HAMILTON ELEM	7	3	1
41	RAVALLI	0735	HAMILTON H S	13	3	2
41	RAVALLI	0737	VICTOR ELEM	5	5	1
41	RAVALLI	0738	VICTOR H S	10	5	2
41	RAVALLI	0739	DARBY ELEM	7	4	1
41	RAVALLI	0740	DARBY H S	12	4	2
41	RAVALLI	0741	LONE ROCK ELEM	5	5	1
41	RAVALLI	0742	FLORENCE-CARLTON ELEM	7	4	1
41	RAVALLI	0743	FLORENCE-CARLTON HS	11	4	2
42	RICHLAND	0745	SIDNEY ELEM	7	3	1
42	RICHLAND	0746	SIDNEY H S	13	3	2
42	RICHLAND	0747	SAVAGE ELEM	5	5	1
42	RICHLAND	0748	SAVAGE H S	10	5	2
42	RICHLAND	0749	BRORSON ELEM	2	5	1
42	RICHLAND	0750	FAIRVIEW ELEM	6	4	1
42	RICHLAND	0751	FAIRVIEW H S	11	4	2
42	RICHLAND	0754	RAU ELEM	4	6	1
42	RICHLAND	0768	LAMBERT ELEM	4	5	1
42	RICHLAND	0769	LAMBERT H S	9	5	2
43	ROOSEVELT	0774	FRONTIER ELEM	5	5	1
43	ROOSEVELT	0775	POPLAR ELEM	7	4	1
43	ROOSEVELT	0776	POPLAR H S	12	4	2
43	ROOSEVELT	0777	CULBERTSON ELEM	6	4	1
43	ROOSEVELT	0778	CULBERTSON H S	10	5	2
43	ROOSEVELT	0780	WOLF POINT ELEM	7	3	1
43	ROOSEVELT	0781	WOLF POINT H S	13	3	2
43	ROOSEVELT	0782	BROCKTON ELEM	4	5	1
43	ROOSEVELT	0783	BROCKTON H S	9	5	2
43	ROOSEVELT	0784	BAINVILLE ELEM	4	5	1
43	ROOSEVELT	0785	BAINVILLE H S	9	5	2
43	ROOSEVELT	0786	FROID ELEM	4	5	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
43	ROOSEVELT	0787	FROID H S	9	5	2
44	ROSEBUD	0788	ROCK SPRING ELEM	1	6	1
44	ROSEBUD	0789	BIRNEY ELEM	2	6	1
44	ROSEBUD	0790	FORSYTH ELEM	7	3	1
44	ROSEBUD	0791	FORSYTH H S	12	3	2
44	ROSEBUD	0792	LAME DEER ELEM	6	4	1
44	ROSEBUD	0794	ROSEBUD ELEM	4	5	1
44	ROSEBUD	0795	ROSEBUD H S	9	5	2
44	ROSEBUD	0796	COLSTRIP ELEM	7	3	1
44	ROSEBUD	0797	COLSTRIP H S	13	3	2
44	ROSEBUD	0800	ASHLAND ELEM	5	6	1
44	ROSEBUD	0801	INGOMAR ELEM	2	6	1
45	SANDERS	0802	PLAINS ELEM	6	4	1
45	SANDERS	0803	PLAINS H S	11	4	2
45	SANDERS	0804	THOMPSON FALLS ELEM	7	4	1
45	SANDERS	0805	THOMPSON FALLS H S	12	4	2
45	SANDERS	0807	TROUT CRK ELEM	4	5	1
45	SANDERS	0808	PARADISE ELEM	4	5	1
45	SANDERS	0809	DIXON ELEM	4	5	1
45	SANDERS	0811	NOXON ELEM	5	5	1
45	SANDERS	0812	NOXON H S	10	6	2
45	SANDERS	0813	CAMAS PRAIRIE ELEM	2	5	1
45	SANDERS	0814	HOT SPRINGS ELEM	5	6	1
45	SANDERS	0815	HOT SPRINGS H S	10	6	2
46	SHERIDAN	0818	WESTBY ELEM	4	6	1
46	SHERIDAN	0819	WESTBY H S	9	6	2
46	SHERIDAN	0821	MEDICINE LK EL	5	5	1
46	SHERIDAN	0822	MEDICINE LK H S	10	5	2
46	SHERIDAN	0827	PLENTYWOOD ELEM	7	4	1
46	SHERIDAN	0828	PLENTYWOOD H S	11	4	2
46	SHERIDAN	0830	OUTLOOK ELEM	4	5	1
46	SHERIDAN	0831	OUTLOOK H S	8	5	2
46	SHERIDAN	0837	HIAWATHA ELEM	2	5	1
47	SILVER BOW	0840	BUTTE ELEM	7	2	1
47	SILVER BOW	0842	RAMSAY ELEM	5	5	1
47	SILVER BOW	0843	DIVIDE ELEM	3	5	1
47	SILVER BOW	0844	MELROSE ELEM	3	6	1
47	SILVER BOW	1212	BUTTE H S	14	2	2
48	STILLWATER	0846	PARK CITY ELEM	6	4	1
48	STILLWATER	0847	PARK CITY H S	11	5	2
48	STILLWATER	0848	COLUMBUS ELEM	7	4	1
48	STILLWATER	0849	COLUMBUS H S	11	4	2
48	STILLWATER	0850	REEDPOINT ELEM	3	5	1
48	STILLWATER	0851	REEDPOINT H S	8	5	2
48	STILLWATER	0852	MOLT ELEM	3	6	1
48	STILLWATER	0853	FISHTAIL ELEM	4	5	1
48	STILLWATER	0857	NYE ELEM	3	6	1
48	STILLWATER	0858	RAPELJE ELEM	4	6	1
48	STILLWATER	0859	RAPELJE H S	8	6	2
48	STILLWATER	0861	ABSAROKEE ELEM	6	4	1
48	STILLWATER	0862	ABSAROKEE H S	11	4	2
49	SWEET GRASS	0865	BIG TIMBER ELEM	7	4	1
49	SWEET GRASS	0868	MELVILLE ELEM	3	6	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
49	SWEET GRASS	0872	GREYCLIFF ELEM	2	5	1
49	SWEET GRASS	0875	MCLEOD ELEM	2	5	1
49	SWEET GRASS	0881	BRIDGE ELEM	1	5	1
49	SWEET GRASS	0882	SWEET GRASS CO HS	11	4	2
50	TETON	0883	CHOTEAU ELEM	6	4	1
50	TETON	0884	CHOTEAU H S	11	4	2
50	TETON	0889	BYNUM ELEM	3	5	1
50	TETON	0890	FAIRFIELD ELEM	6	4	1
50	TETON	0891	FAIRFIELD H S	11	4	2
50	TETON	0892	DUTTON ELEM	4	5	1
50	TETON	0893	DUTTON H S	9	5	2
50	TETON	0894	POWER ELEM	4	5	1
50	TETON	0895	POWER H S	9	5	2
50	TETON	0896	GOLDEN RIDGE ELEM	3	5	1
50	TETON	0898	PENDROY ELEM	2	5	1
50	TETON	0900	GREENFIELD ELEM	4	5	1
51	TOOLE	0902	SUNBURST ELEM	5	6	1
51	TOOLE	0903	SUNBURST H S	11	6	2
51	TOOLE	0907	KEVIN ELEM	3	5	1
51	TOOLE	0910	SHELBY ELEM	7	3	1
51	TOOLE	0911	SHELBY H S	11	3	2
51	TOOLE	0915	GALATA ELEM	3	5	1
52	TREASURE	0922	HYSHAM ELEM	5	6	1
52	TREASURE	0923	HYSHAM H S	10	6	2
53	VALLEY	0925	GLASGOW ELEM	7	3	1
53	VALLEY	0926	GLASGOW H S	13	3	2
53	VALLEY	0927	FRAZER ELEM	5	5	1
53	VALLEY	0928	FRAZER H S	9	5	2
53	VALLEY	0932	HINSDALE ELEM	4	5	1
53	VALLEY	0933	HINSDALE H S	9	5	2
53	VALLEY	0934	OPHEIM ELEM	5	6	1
53	VALLEY	0935	OPHEIM H S	9	6	2
53	VALLEY	0936	NASHUA ELEM	5	5	1
53	VALLEY	0937	NASHUA H S	10	5	2
53	VALLEY	0940	FT PECK ELEM	3	5	1
53	VALLEY	0941	LUSTRE ELEM	4	6	1
54	WHEATLAND	0944	TWO DOT ELEM	1	5	1
54	WHEATLAND	0945	HARLOWTON ELEM	6	6	1
54	WHEATLAND	0946	HARLOWTON H S	11	6	2
54	WHEATLAND	0947	SHAWMUT ELEM	2	5	1
54	WHEATLAND	0948	JUDITH GAP ELEM	4	5	1
54	WHEATLAND	0949	JUDITH GAP H S	9	5	2
55	WIBAUX	0954	WIBAUX ELEM	5	6	1
55	WIBAUX	0964	WIBAUX H S	10	6	2
56	YELLOWSTONE	0965	BILLINGS ELEM	7	1	1
56	YELLOWSTONE	0966	BILLINGS H S	14	1	2
56	YELLOWSTONE	0967	LOCKWOOD ELEM	7	1	1
56	YELLOWSTONE	0968	BLUE CREEK ELEM	5	1	1
56	YELLOWSTONE	0969	CANYON CRK ELEM	6	1	1
56	YELLOWSTONE	0970	LAUREL ELEM	7	3	1
56	YELLOWSTONE	0971	LAUREL H S	13	3	2
56	YELLOWSTONE	0972	ELDER GROVE ELEM	5	1	1
56	YELLOWSTONE	0974	CUSTER ELEM	4	6	1

Table 31--Continued.

CO	COUNTY	LEGAL ENTITY	SCHOOL DISTRICT	FUNDING CATEGORY	COMMUNITY SIZE	INSTRUCTION LEVEL
56	YELLOWSTONE	0975	CUSTER H S	9	6	2
56	YELLOWSTONE	0976	MORIN ELEM	3	6	1
56	YELLOWSTONE	0978	BROADVIEW ELEM	4	6	1
56	YELLOWSTONE	0979	BROADVIEW H S	9	6	2
56	YELLOWSTONE	0981	ELYSIAN ELEM	4	1	1
56	YELLOWSTONE	0982	HUNTLEY PROJ ELEM	7	1	1
56	YELLOWSTONE	0983	HUNTLEY PROJ HS	11	1	2
56	YELLOWSTONE	0985	SHEPHERD ELEM	7	1	1
56	YELLOWSTONE	0986	SHEPHERD H S	12	1	2
56	YELLOWSTONE	0987	PIONEER ELEM	4	1	1
56	YELLOWSTONE	0989	INDEPENDENT ELEM	5	1	1
56	YELLOWSTONE	1196	YLSTN EDUCATION CENTER	0	1	1

Source: Montana Office of Public Instruction (1989).

APPENDIX B

PROCEDURES FOR

ISOLATION CLASSIFICATION

PROCEDURES FOR ISOLATION CLASSIFICATION

10.30.101 APPLICATION INFORMATION

(1) The trustees of a district applying to have a school classified as an isolated school shall provide information as requested by the Superintendent of Public Instruction. Isolation status shall be approved for a period of three consecutive school years, or until there are changes in the approval criteria documentation provided to the Superintendent of Public Instruction. If during that period there are changes in the conditions allowing isolation classification, or the school is no longer accredited by the Board of Public Education, isolation classification is terminated.

101.30.102 APPROVAL CRITERIA

(1) In considering a request for approval of an application to have a school classified as an isolated school, the Superintendent of Public Instruction shall utilize the following criteria:

(a) An application form has been completed by the trustees, approved by the Board of County Commissioners (budget board), received by the County Superintendent on or before May 1, and received by the Superintendent of Public Instruction on or before June 1.

(b) The applicant school is an operating elementary school district of less than 10 ANB or a high school of less than 25 ANB for the second consecutive year.

(c) Another operating school(s) with room to accommodate applicant's students is further than a distance of 20 passable road miles from applicant school.

(d) Less than 50% or more of the students from the applicant school can, under normal conditions, be transported to the closest operating school(s) in a period of one hour or less.

(i) In determining transportation time to the closest operating school with room to accommodate students, available bus transportation, either elementary or high school, will be taken into consideration.

(ii) If a family member rides a bus to another school, that bus will be considered as available transportation for an elementary child in the same family if the bus provides transportation to an available operating school with room to accommodate the student.

(e) Extenuating circumstances which support a variance from the requirements of (a) through (d) above must be documented for consideration by the Superintendent of Public Instruction.