

1984

An analysis of the costs of administration in teacher evaluation

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EVALUATION

Iowa State University

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An analysis of the costs of administration
in teacher evaluation

by

David F. Darnell

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Department: Professional Studies in Education
Major: Education (Educational Administration)

Approved:

Signature was redacted for privacy.

In Charge of Major Work

Signature was redacted for privacy.

For the Major Department

Signature was redacted for privacy.

For the Graduate College

Iowa State University
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1984

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CHAPTER I. INTRODUCTION

United States schools are in the midst of controversy which may be unparalleled in this nation's history. That controversy has been prompted by the publication of several national reports and studies (7, 32, 60, 89). Theodore Sizer, formerly Dean of the College of Education at Harvard, captured the essence of the national reports and studies when he identified seven common trends in those documents (79). Sizer noted those trends as follows:

1. There must be a return to 'the basics;'
2. The connection between school and the economy needs strengthening;
3. Adults must regain authority in the high schools and students should have less freedom than they may have had in the 1960s;
4. The principal element of reform should be the state government;
5. There should be various kinds of schools, and families should be able to choose the ones their children will attend;
6. Schools and students should be judged on the basis of measurable results of teaching and learning;
7. The cost of schools must be reduced (79).

Overall, the studies echo two themes; people are concerned about teacher/administrator performance and equally concerned about declining student achievement in their schools. Since the primary responsibility for student learner outcomes rests with the performance of educators as they teach students, increased interest in improved evaluation procedures for teachers and administrators has dominated much discussion about schools (5, 10, 23, 48, 49). The public wants to be assured that the adults who are charged with the responsibility of teaching their young are performing adequately.

Several conflicting and competing conditions have had a direct impact on the national attitudes concerning education: budget constraints, declining enrollment, stable and aging teacher and administrator populations, changing family structures, changing social values, and lack of clarity in defining the contexts of what good schools should really be.

Statement of the Problem

Our nation's desire for excellent schools is not new; it is re-focused today under the impact of recent national studies, such as The Paideia Proposal, High School: A Report of Secondary Education in America, and A Nation at Risk: The Imperative for Educational Reform (2, 7, 60). Gallup poll results of recent years reflect the public's desire for quality education and generally describe supportive attitudes toward schools (28, 29). When Goldman compared the results of the Gallup and Better Homes and Gardens polls with A Nation at Risk, he found that people perceived a need for schools to provide more services and programs for students (31), while the report suggested a reduction of programs to concentrate on the "core" subjects. Quality, equal access by race, sex, and socio-economic status, and the basic purposes of education in our nation are viewed quite differently by varying groups, as was evidenced in Goldman's article.

The largest share of any school's budget is in personnel costs, primarily for teachers and administrators. Underlying the challenges for school improvement is the public demand for removal of sub-par teachers. If schools are to improve, the schools' professionals, specifically teachers and administrators, must improve their performances.

Suggestions for improving the performances of teachers and administrators are met with the refrain, that takes too much time, or that takes too much money!

Systematically itemized cost analysis of the budget would do a great deal to assist school boards in making better decisions in solving local educational problems. Clearly, the vital issues of educational priorities cannot be addressed intelligently without concise and accurate cost data. Decisions regarding the future of students is difficult enough in the political and social environment of the 1980s without confounding the problems with inaccurate or incomplete facts.

Purposes of the Study

The present investigation was designed to create a model which could be utilized in delineating the costs of teacher evaluation. Implementing such a model could assist local schools in determining budget commitments to the evaluation process. More specifically, the purposes of this study are:

1. To identify components of general fund school budgets needed to delineate direct and indirect costs of administration. Those components would also be applied to three major areas of time commitment in administrators' duties: general administration, supervision, and teacher evaluation.
2. To analyze the data using formats contained in handbooks for uniform financial accounting systems as implemented in Iowa and Minnesota, as well as the National Association of Independent Schools manual.

3. To create formulas for extracting administrative costs in teacher evaluation as a percentage of administrative time.
 4. To create administrative and supervisory cost formulas which would be applicable to various local school sizes and settings.
- Five School Improvement Model (SIM) Project school organizations were used for the test of suitability.¹

Questions

Preliminary examination of research on administrative and supervisory costs generated a number of questions. Those questions centered on teacher evaluation and supervision, budgeting and financial constraints, the concepts of benefit-cost analysis as used in business and industry, and the social and political climate of the 1980s. Two methods of teacher evaluation were employed by the SIM school organizations: clinical supervision (a developmental, "coaching" process), and teacher performance evaluation (includes clinical supervision concepts, plus judgments of performance based on pre-determined performance criteria). Questions explored in this investigation include:

1. Can costs of general administration, supervision, and teacher evaluation (either clinical supervision or teacher performance evaluation) be accurately determined?
2. What are the general administrative costs for K-12 public and independent school organizations?

¹SIM includes four public school districts and an independent school; hence, the term school organizations.

3. What parts of the total administrative costs can be attributed to supervision (a subset of general administrative costs) of K-12 public and independent school organizations?
4. What are the actual costs for administrators to evaluate teachers in K-12 public and independent school organizations?
5. How does the cost of teacher performance evaluation vary from the cost of clinical supervision in K-12 public and independent school organizations?
6. How many person/hours per teacher are spent in each of the above activities?

Statement of Objectives

There were ten objectives suggested by the preceding questions.

They were:

1. To create a methodology for disaggregating costs of general administration, supervision, teacher performance evaluation, and clinical supervision from line item budgets.
2. To determine the general administrative costs from Minneapolis Public Schools, Edina Public Schools, and Northfield Public Schools, in Minnesota; Spirit Lake Community Schools, in Iowa; and Breck School, an independent pre-kindergarten-12 school organization in Minneapolis, Minnesota.
3. To disaggregate all supervisory activities that center on helping teachers improve instruction.
4. To create unit costs for these activities by teacher.

5. To determine all activities and the associated time devoted to teacher performance evaluation.
6. To determine all activities and the associated time devoted to clinical supervision.
7. To compute unit cost (per teacher evaluated) for each of the above activities in each school organization.
8. To categorize all of these activities and costs by size of public school organization and by public or independent school organization.
9. To include the costs of SIM activities in each of the school organizations.
10. To calculate mean costs across organizations for all of the above schools and items.

Statement of Hypotheses

The questions and objectives stated previously provided a basis for generating nine hypotheses for the research. Those hypotheses were organized in the following manner:

1. There will be no significant differences in general administrative costs by size, type, or level of school organization among the SIM schools.
2. There will be no significant differences in the costs of supervision by size, type, or level of school organization among the SIM schools.

3. There will be no significant differences in teacher performance evaluation costs by size, type, or level of school organization among the SIM schools.
4. There will be no significant differences in clinical supervision costs by size, type, or level of school organization among the SIM schools.
5. There will be no significant differences in general administration costs between elementary and secondary schools in the SIM project.
6. There will be no significant differences in supervision costs between elementary and secondary schools in the SIM project.
7. There will be no significant differences in teacher performance evaluation costs between elementary and secondary schools in the SIM project.
8. There will be no significant differences in clinical supervision costs between elementary and secondary schools in the SIM project.
9. There will be no significant differences between the costs of teacher performance evaluation and clinical supervision.

Definition of Terms

For the purposes of the present study, a number of concepts need to be operationally defined, including three components (general administration, supervision, and teacher evaluation) of administration:

General Administration - All administrative activities excluding supervision, teacher performance evaluation, and clinical

supervision, viz., paperwork, telephone, staff meetings, parent conferences, central office or division meetings (78).

Supervision - What school personnel do with adults and things to maintain or change the school operation in ways that directly influence the teaching processes employed to promote pupil learning (63).

Teacher Evaluation - The assessment of teacher performance, most commonly involving three assessment tactics: ratings, systematic observations, and pupil performance (68).

Several other terms merit definition for clarity in reading the present investigation:

Benefit-Cost Analysis - A process for determining costs of a program or activity in relation to the benefits derived, either social or monetary (88).

Clinical Supervision - A particular approach to developmental teacher performance evaluation (sometimes called formative evaluation) conceptualized by Anderson, Cogan, and Goldhammer, which includes five steps: (1) pre-observation conference, (2) classroom observation, (3) analysis and strategy session, (4) supervisory (feedback) conference, and (5) post-conference analysis (23).

Formative Evaluation - A descriptive, nonjudgmental, and developmental process of teacher evaluation involving the instructional process, not the individual.

Handbook II (revised) - A 1973 revision of the federal Office of Education version of Handbook II (1957), which describes classifications and standard terminology for financial accounting in local and state school systems (40).

National Association of Independent Schools - An organization which provides leadership and policy references to independent schools. This association's uniform financial accounting manual was utilized in the present study (59).

School Improvement Model Project - A consortium of five schools in Minnesota and Iowa which collaborated under the auspices of the Northwest Area Foundation and Iowa State University to integrate staff development, performance appraisal, and the components of effective school research. Selected fourth and eighth grade subjects were targeted for improvement (92).

School Size - For the purposes of this study, school size is based on total numbers of teachers employed in the school organization.

Summative Evaluation - A final judgment of performance in the evaluation process compared to that of others.

Teacher Advisors - Teachers who are used as clinicians in the Northfield, Minnesota teacher evaluation process.

Teacher Performance Evaluation - Assessment of progress toward pre-determined performance criteria. In the SIM model, it includes clinical supervision, summative evaluation, and the setting of one or more job improvement targets (49).

Assumptions

It was assumed that budget and financial data supplied by the SIM schools would be accurate and complete. It was further assumed that personnel data and time analysis estimates by administrators and teacher advisors involved in the SIM project would be accurate, and that all costs of administration (general administration, supervision, teacher performance evaluation, and clinical supervision) in teacher evaluation could be accurately estimated by a pro rata formula.

Delimitations

The present study was limited to school administrators and teacher advisors who were participants in the SIM project, and who, consequently, evaluated teachers in either fourth or eighth grade. Administrators and teacher advisors who evaluated teachers in buildings containing fourth grade students comprised the elementary portion of the sample; those who evaluated teachers in buildings containing eighth grade students, the secondary portion of the sample. No senior high schools were included in the present investigation. In addition, data collected were obtained from three sources: (1) central office personnel, (2) budget records, and (3) a survey of administrators for estimations of time spent in the

three major areas of administration defined previously (78). Data collected were from fiscal year '83 (the 1982-83 school year). Categorical funding was removed from budget totals before computing administrative costs in teacher evaluation to facilitate the making of meaningful comparisons among the diverse school organizations of SIM. Those categories removed included food service, community service, plant and maintenance, fixed costs, transportation, and any other state, federal, or foundation programs which were not associated directly with the instructional general fund budget. The numbers in this research accurately describe costs within the SIM schools, but are only illustrative of how the model works. They may not be generalized to a larger target population. The numbers are not really that important; the model is the product.

Significance of the Study

Research on school finance and budget has typically been internal (within school organizations), or external (comparing budget figures to different models or strategies for financial planning). The literature search demonstrated a paucity of studies which delineate situation-specific applications to local budget questions. A search of Dissertation Abstracts International from 1977 through 1983, and ERIC resources from 1979 to the present, revealed only eight dissertations or theses which addressed this topic (13, 14, 15, 24, 41, 46, 66, 71). Sources located provided only partial definition of costs. The present study provided a more specific delineation of the costs of administration in teacher evaluation. In addition, the concepts which were utilized to

create the financial model could be adapted to other situations, such as determining the actual costs of data processing services, or the actual cost of specific educational programs or services. Further, it should provide a partial answer to the relevant costs of two approaches to teacher evaluation -- teacher performance evaluation and clinical supervision.

An additional contribution of the present investigation was the comparison of teacher evaluation costs in an independent school with those of four public schools. A final contribution was associated with the concern of the general public about removal of sub-par teachers from the classroom. Several writers have advised that this cannot be accomplished in a valid and reliable way.

Deal has written that both teachers and administrators are highly dissatisfied with current evaluation practices (18), while McNeil finds that teachers see administrators as too busy to do an adequate job of evaluation (53). Popham summarized the concern for effective teacher evaluation practices when he stated:

One can understand why these instructor-evaluation systems have proven so impotent, inasmuch as an indispensable ingredient of such systems is missing, that is, a reliable and valid measure of the teacher's instructional prowess (68).

Sweeney and Manatt, on the other hand, insist that it can be done with the addition of intensive assistance teams to help marginal teachers improve their performance (87). In any event, no one is sure what such efforts cost. The present study will provide information on one facet

of improvement, evaluation of teachers, and the costs of performing that task.

CHAPTER II. REVIEW OF LITERATURE

Introduction

The early 1980s presented unprecedented challenges for United States education. Concerned citizens from the public and private sector were demanding that schools be improved; schools needed change. Among other things, these citizens were insisting that teachers utilize more effective teaching methodology. A different kind of administrative supervision from the typical was perceived to be necessary if principals and division heads were going to be able to provide appropriate leadership. Requirements for different teaching and leadership practice generated questions of administrator availability to support improvement efforts, and the ultimate costs to school organizations.

The present investigation was intended to provide tentative answers to questions as to whether the needed changes in supervisory practice were too costly or too time-consuming. In a particularly relevant article, Darling-Hammond stated, "It's easy to say that we ought to get rid of bad teachers, reward good teachers, and evaluate all teachers carefully. But we often fail to recognize the high financial cost that is involved in performing this function adequately" (16). Darling-Hammond underscored a common assumption that high-leveraged management activity is costly. Simply put, the financial models developed in the present study addressed the questions of how much time and how much money was required to perform teacher evaluation in the five school organizations of the School Improvement Model Project (SIM).

To provide the reader with an understanding of these questions, the following concepts need clarification: the theory and practice behind current teacher supervision and evaluation; the relative emphasis placed by typical administrators on general administration, supervision, and teacher evaluation; and methodology for unit cost disaggregation (similar to benefit-cost analysis). Finally, since this study was based on data generated by the Northwest Area Foundation's SIM Project, the reader needs to understand SIM.

Need for the Study

Declining enrollment, tight budgets, and demands for a quality education product have focused increasing attention on the performance of teachers and administrators. School administrators' abilities to assess teacher performance have attracted special attention. Despite this attention, there has been little analysis of the costs of teacher evaluation, although Lane (43) has delineated the costs of teaching reading and mathematics in the SIM school organizations. Beyond Lane's study and the present investigation, most researchers have confined themselves to applications of budget theory, studies of single school organizations, or the social benefit derived from school expenditures. The present study provided a vehicle for analyzing costs of administration in teacher evaluation. Popham highlighted the need for such an analysis when he stated:

Anyone familiar with a school budget can tell you that there is no way of using that data source to calculate how much a particular program, for instance, the teaching of third-grade social studies, really costs (68).

Darling-Hammond was even more specific concerning costs of administration in teacher evaluation when she wrote, "The time required for adequate observation and documentation of every teacher's performance -- whether by administrators or peers -- requires substantial resources on top of the additional resources needed to pay teachers for their meritorious performance" (16).

Related Research

The 1980s

Today's climate is one of change and challenge. United States schools are being scrutinized more carefully than at any time since Sputnik. Critics of the schools abound, both from a societal perspective and from a child-benefit perspective (47). Professional and lay educational organizations are responding to the criticisms with statements of intent, rebuttal, and defense (6, 61, 65, 80). Attitudes of the public in general toward education have changed as well. For example, in 1974, 48 percent of those surveyed in the Gallup poll graded their own schools as an A or B; only 42 percent did so in 1983 (29).

Private business and industry are vitally interested in the quality of education, since billions of dollars are spent each year in training and retraining employees (21). Successful business practices are having an effect on the public sector, education specifically. One such concept is that of quality circles, as espoused by Ouchi in Theory Z (64). Excellence is being studied in all areas of our society, not just education. Peters and Waterman have researched successful United States corporations for common practices (67). Elements which typify

outstanding corporations are also prevalent in excellent schools. Authors who are forecasting the future of our nation and world have paid particular attention to the vital role of education (21, 37, 58, 83). The most popular of those writers, Naisbitt, focuses on the importance of education in our transition from an industrial to an information society (58).

Improvement efforts

A flurry of activity directed at school improvement has occurred nation-wide as pressure for quality schools has intensified. All 50 states have identified formal or informal strategies for school improvement (55, 62, 90). Recent state mandates and organized committee efforts speak directly to one or more of the following: improved administrative performance, improved teaching practice, classroom productivity, the work environment, and the teaching profession. Each of these components of the school setting requires effective administrative leadership and skill. Paradoxically, the public asks for fewer administrators on the one hand, yet clamors for closer supervision of teachers on the other! Twenty-six states have mandated or regulated teacher evaluation for the purposes of dismissal, improvement of instruction, or accountability (94). All but three states have created evaluation laws or rules for teachers and administrators since 1973, thus reflecting the recent emphasis which has been placed on evaluation in the schools.

The present researcher was chosen to attend the National Forum on Excellence in Education in December of 1983. Educators from across

the United States gathered to reflect on the national studies and reports. Secretary of Education Terrell Bell summarized the three-day forum by challenging the states in his concluding remarks:

I would like to see each state accept a challenge to attain at least four major goals over the next five years.

By 1989, all high school graduates in all fifty states will be required to study English for four years, and math, science, and social studies for three years. All students will be required to pass examinations in these areas. Only those not intellectually competent will be excused. The percentage of students completing at least two years of foreign language will match the percentage of students entering college. There will be no decline in the commitment nor the momentum to provide equal opportunity, special help to the disadvantaged, or free and appropriate education to the handicapped.

In every state, the high school graduating class will surpass by 1989 the high school graduating class SAT/ACT scores attained by the class of 1965.

Every state by 1989 will increase the retention power and decrease the high school dropout rate so that no state will have a dropout rate in excess of ten percent.

Every state will make teaching so attractive that entry level college graduates' salaries will be competitive with the average entry level salaries of college graduates with degrees in business and engineering (6).

SIM

Before the mandates and incentives were initiated, many local education agencies, and especially state agencies, forged ahead with their own improvement programs. One such activity was the SIM project, a joint effort of five school organizations from Minnesota and Iowa, the Northwest Area Foundation, and Iowa State University (92). This consortium of school organizations linked teacher evaluation, administrator evaluation, staff development, and student testing as a

means to improve student achievement. SIM allowed each of the five school organizations to choose their own types of interventions for staff development, their own philosophies and policies, and criteria for teacher and administrator evaluation which were within the context of current research on effective schools (48, 63, 70, 82, 86). Early evidence from the SIM project was encouraging (8); however, teacher evaluation costs associated with the project, other than the contractual agreement required to participate, have not been delineated.

Budget history

Typical budget planning and structure has been one of four types: program, zero-based, school-site, and formula (37). In recent years, schools have concentrated on categorizing and organizing budgets (formula type) to assure more efficient expenditures of funds (20, 35). Attempts have also been made to assimilate business practices into school finance and budgeting, including the concepts of Zero-Based Budgeting (ZBB) and Planning, Programming, Budgeting System (PPBS) (38). These concepts have demonstrated partial utility for schools from the standpoint of organization of data, but problems indigenous to school funding and budget are not addressed. The Wall Street Journal summed up the limits of ZBB for schools, for example, when an article stated that the worth of programs couldn't be described in two-page forms (3).

Benefit-cost analysis

As a natural outgrowth of public concern over tax expenditures, schools have been forced to consider the elements of benefit-cost

analysis (a term used interchangeably with cost-benefit analysis) in budget planning. Benefit-cost analysis is not a new concept. As early as 1844, Dupuit wrote a treatise on the financial utility of public works (69). The River Harbor Act of 1902 mandated the Army Corps of Engineers to relate project costs to societal benefits (69). Increased involvement of the federal government in the public sector from the New Deal to the Great Society era brought forth a greater public awareness of financial commitments to social programs, including education. Benefit-cost analysis concepts considered the benefits derived per dollar expended (45, 69, 73, 88). Most attempts to apply benefit-cost analysis concepts to education revolved around attempts to predict the value in personal income (and, hence, taxes paid) as a result of education (45, 73).

To other researchers studying benefit-cost analysis, it appears that the most important publications are those of Thompson for theoretical bases and public sector applicability (88), Hartley for application to budget construction (36), and Hogan and Snyder for situation-specific applications (39).

Assessing costs

Despite pressures to justify tax expenditures and increased interest in the effectiveness of schools, there has been little research done in delineating the costs of specific programs or services of schools, other than the typical line-item budget analyses as mandated in uniform financial accounting systems (40, 56, 59). Fortunately, researchers continued to probe the questions of cost analysis in

greater detail. Benefit-cost analysis formulas for public sector settings were developed by Thompson in his most recent book (88). Hartley developed applied PPBS and benefit-cost analysis techniques in developing sophisticated budget analysis and planning techniques (36). Perhaps the most succinct and usable concepts for the present study were provided by the work of Hogan and Snyder, who presented an effective conceptual design for assessing situation-specific costs in education (39).

Dissertations which related directly to the present investigation (13, 14, 15, 24, 41, 46, 66, 71) included Lott's study of Mississippi school organizations, where he found a significant relationship between student achievement and administrative costs (46), thus reinforcing the need to delineate and interpret administrative costs. Danes divided unit (per-pupil) costs in a Chicago suburb school organization into five categories: teaching salaries, academic support salaries, non-academic support salaries, cost of supplies, and cost of plant operation (15). Unfortunately, administrative costs such as those associated with teacher evaluation were not codified. Riess' study of program cost ratios across 27 school organizations in Iowa utilized benefit-cost analysis principles; yet he also underscored the need for consistent means of data collection in order to plan and manage funding effectively (71). Formulas for projecting administrative costs were not identified.

An analysis of the costs of implementing a teacher assessment program in Colorado Springs, Colorado provided the most similar research

to the present investigation (14). The original study by Dalglish was intended to determine the impact of the new system on both tenured and non-tenured teachers. An interesting finding was that a revised teacher evaluation program such as that instituted in Colorado Springs would be likely to require a marked increase in expenditures (14).

A reanalysis of the Dalglish study by Kerr (41) delineated implementation costs of the evaluation system for tenured and non-tenured teachers. Kerr's research, while listing costs for teacher evaluation, was more concerned with staff perceptions of success than with the cost effectiveness of the new system. The present investigation developed models for assessing costs of teacher evaluation in varied school organization sizes and for different local approaches to teacher evaluation.

Computers

In any effort to codify data, the power of the computer provides flexibility and speed. For data analysis purposes, there are two general routes: the mainframe computer, or the microcomputer. Two well-known computer applications, SPSSx (81) and Advanced Version Visicalc (54), were used in the present investigation. Data were entered on both computers, thus demonstrating that the concepts and models presented in the present study could be applied either at a computer center or in a local setting with the assistance of a micro-computer and existing software.

Conclusion

For schools to improve, teachers and administrators must perform at optimum levels of performance and efficiency. Strategic decisions must be made by boards of education and administrators in allocations of time, space, equipment, and supplies (68). Teachers must be evaluated to assess performance. As a function of time, evaluation of teachers will be a cost to be considered as school organizations plan for future expenditures.

Other researchers have utilized available benefit-cost analysis techniques with similar results in many cases; more specific information was needed. Methods employed most often in the studies reviewed either neglected to compute administrative costs, or grouped those costs with other areas so that detailed analysis was not possible. Kerr's study, the most parallel research to the present study, did delineate yearly costs for evaluating non-tenured and tenured teachers at \$658.51 and \$525.64, respectively. Those costs included average hourly wages for Colorado Springs teachers, administrators, and team leaders, as well as substitute pay for release time during evaluation system training for teachers.

The present investigation, by delineating costs of administration in teacher evaluation in five distinctly different school organizations, addressed the questions, how much time does it take to evaluate teachers, and how much does it cost?

CHAPTER III. METHODS

The Sample

Any attempt to create models for cost analysis in school organizations must deal directly with questions of what to include in the analysis, and what to exclude. For the purposes of the present study, it was determined that the most appropriate formulas for computing administrative costs in teacher evaluation would be those which dealt most directly with instructional expenditures. The five SIM school organizations provided an intriguing challenge, in that they represented two states, public and non-public structures, were large metropolitan to small rural school organization in size, and representative of three different styles of teacher evaluation: teacher evaluation/teacher advisor methods, teacher performance evaluation, and clinical supervision. In addition, the SIM organizations represented vastly differing federal and state programs, transportation costs, and budget commitments toward such programs as community service and school nutrition. All school organizations utilized in the present investigation did have a common essential component: administrators (and/or teacher advisors) working with teachers in the evaluation process.

The Design

To arrive at financial data analysis of the components of teacher evaluation, steps had to be implemented to categorize general budget expenditures so that models would be applicable to any school organization. Business managers from each of the five SIM school organizations

were interviewed to solicit their thoughts about the methods being considered. To further study the disaggregation process, copies of central office budget information were obtained from each SIM organization.

Uniform financial accounting procedure manuals from Iowa (40), Minnesota (56), and the National Association of Independent Schools (59) were reviewed in order to determine definitions and funding codes being considered in developing the models for the present investigation. Following these steps, it was determined that categorical funding be disaggregated from the general fund budget totals before computation of administrative costs in teacher evaluation would be appropriate. Categorical funds removed included: food service, community service, plant and maintenance (including utility and capital outlay costs), fixed costs (employee benefits and organization insurance costs), transportation, and state, federal, or foundation monies.

The rationale for disaggregating categorical funding was that there was so much disparity in budget structure from organization to organization and from building to building that reasonable comparisons were not possible without reorganizing the data. For example, transportation costs varied from none (private or parent carriers funded by individual families) to a large portion of the budget (physically large student population area); utility costs were dependent upon locale, rate structures, and building design and condition; insurance and benefit costs varied state to state and organization to organization, based on rate of contribution, and precise benefits

paid to employees. An added reason for disaggregating categorical funding was to achieve the previously stated purpose of reducing budget totals to those most closely associated with instruction expenditures. Before proceeding, financial data from a familiar public school were studied, and funds categorized on a trial basis, to ascertain the appropriateness of the logic employed.

A symbolic representation of the concept being discussed follows:

$$\begin{aligned} \text{Total budget} - \text{Categorical funding} = \\ \text{Instructional General Fund Budget (IB)}. \end{aligned}$$

Table 1 reports the individual building instructional budgets as extracted from the SIM school organizations' financial data.

The instructional general fund budget served as a point of departure for determining the costs of administration in teacher evaluation. By disaggregating categorical funding from the total general fund budget, the amount remaining included those costs most directly associated with the instruction of students: teacher and administrator salaries, textbooks, workbooks and supplies, and instructional support personnel salaries.

Instrumentation

Determining administrative costs in teacher evaluation required computation of the time involved in the process as a percentage of total administrative time. By subdividing administrative time into segments of the process, it was possible to compute a percentage of total time, and thus, the percentage of salary which was invested in

Table 1. Instructional budgets by building

School organization	School type	Building	Instructional budget
Breck	Secondary	Middle School	673,133
	Elementary	Lower School	807,760
Edina	Secondary	Valley View	1,961,548
	Secondary	South View	1,409,005
	Elementary	Cornelia	733,147
	Elementary	Concord	916,048
	Elementary	Creek Valley	929,982
Minneapolis	Secondary	Folwell	1,695,530
	Elementary	Fulton	979,033
	Elementary	Bancroft	1,075,832
	Secondary	Anwatin	1,539,500
	Secondary	Franklin	1,575,834
	Elementary	Jefferson	1,462,613
	Elementary	Kenwood	739,045
	Elementary	Lincoln	1,137,175
	Elementary	Putnam	650,523
	Elementary	Waite Park	936,102
Northfield	Secondary	Middle School	1,086,277
	Elementary	Sibley	464,577
Spirit Lake	Secondary	Junior High	317,306
	Elementary	Elementary	768,759

teacher evaluation. A questionnaire (Appendix) was developed through SIM for several data-gathering purposes (78).

Questions six through nine of the SIM survey were coded for the purposes of the present study. Sample subjects estimated time per teacher evaluated per year in each facet of evaluation including: informal observation, preparation for pre-observation conferences, conducting pre-observation conferences, formal classroom observations, preparation of reports from observations, preparation for post-observation

conferences, conducting post-observation conferences, observation for reinforcement, and preparation of reports after conferences. Unfortunately, the estimate for informal observation was printed in error as "information observation" on the survey instrument. As a result, responses in the "information observation" category were added to estimates of time spent observing for reinforcement since those two evaluation components were similar. Respondents also estimated the percentage of total time committed to general administration, supervision, and teacher evaluation.

The questionnaire was completed in the spring of 1983 by the 23 administrators and teacher advisors comprising the data sample. Responses were coded on the Iowa State University mainframe computer via SPSSx (81) for application of the financial models. In addition, a similar data structure was designed on an Apple III microcomputer utilizing Advanced Version Visicalc (54).

The SIM organizations represented three approaches to teacher evaluation. One school organization utilized teacher evaluation/teacher advisor methods, two used teacher performance evaluation, and one used clinical supervision. Spirit Lake, Iowa presented an interesting data source, in that one building principal in the sample employed the principles of clinical supervision, and the other the principles of teacher performance evaluation.

Formula structures were developed as follows, where:

Te = number of teachers to evaluate

It = evaluation time in hours per teacher (the sum of minutes per teacher in evaluation activities as

listed on the survey instrument divided by 60),
and

Ta = total administrator/teacher advisor hours spent
in teacher evaluation, then

$$Ta = Te \times Tt.$$

Table 2 lists the results of Ta computations for the SIM buildings included in the present study.

The next step involved computation of the percentage of administrative/teacher advisor time spent in teacher evaluation.

The formula employed was organized as follows:

T% = percent of administrator time in evaluation

Sd = contract days per administrator, then

$$T\% = Ta/Sd \times 8 \text{ hours per day.}$$

Table 3 represents computation of T% for each sample administrator and teacher advisor.

Percentage estimates of time spent in general administration (GA), supervision (SUP), and teacher evaluation (TE) were listed by all respondents. A summary of those estimates is found in Table 4.

A fascinating result of surveying percentage of time spent in teacher evaluation activities two different ways (T% and TE) was that only one administrator or teacher advisor in the sample actually spent the time they themselves had estimated. Decisions had to be made regarding general administration and supervision estimates if, in fact, the time spent on teacher evaluation was less than the subjects had stated. Since all respondents had practiced time logging as a component of the SIM project, it was assumed for the present study that the most

Table 2. Estimated time spent in evaluation

School organization	SIM ID	# to eval.	Avg. # obs.	Minutes per teacher evaluated								Total hours
				Pre-obs. prep.	Pre-obs. conf.	Formal obs.	Obs. report	Post-obs. prep.	Post-obs. conf.	Reinf. obs.	Rep. after conf.	
Breck	2	25	2	20	10	90	60	40	45	40	40	143.75
	1	30	2	10	10	90	15	15	60	0	20	110.00
Edina	10	9	2	10	20	130	20	15	40	0	50	42.75
	9	9	4	120	150	220	120	120	200	75	180	177.75
	5	6	5	10	10	47	50	30	30	20	60	25.70
	4	6	4	5	10	30	15	10	15	5	10	10.00
	7	6	4	60	120	120	273	120	180	0	120	99.30
Minneapolis	15	9	4	40	50	0	30	10	120	30	60	51.00
	17	10	3	20	30	90	60	60	40	30	30	60.00
	13	7	2	5	10	52	30	15	22	10	15	18.55
	12	6	2	5	20	56	0	20	30	0	15	14.60
	16	21	3	20	40	55	15	20	30	25	10	75.25
	21	8	3	60	45	90	45	60	60	20	90	62.67
	22	7	2	12	20	50	17	20	25	15	30	22.05
	23	7	3	10	15	47	10	10	15	10	10	14.82
	28	7	2	30	30	60	30	15	30	15	45	29.75
	30	7	3	60	30	60	75	60	60	30	90	54.25
Northfield	39	12	3	0	0	150	50	30	120	60	15	85.00
		8	1	0	0	50	15	15	30	0	0	14.67
	37	3	6	0	0	80	120	20	60	170	20	23.50
		15	1	0	0	90	60	20	40	170	20	100.00
	37ta ^a	3	4	0	0	20	30	30	30	30	30	8.50
		15	1	0	0	10	15	20	10	25	20	25.00
	39ta	6	4	0	0	90	20	20	60	120	20	33.00
	14	1	0	0	50	20	20	60	80	20	58.33	
Spirit Lake	42	10	3	0	0	200	50	50	30	10	100	73.33
	41	38	4	60	20	120	120	80	80	0	80	354.67

^aDenotes teacher advisor.

Table 3. Computation of percentage of time in teacher evaluation

School organization	SIM ID	Contract days	Hours/day	Contract hours	Eval. hours	Percent of time
Breck	2	225	8	1800	143.75	7.99
	1	225	8	1800	110.00	6.11
Edina	10	235	8	1880	42.75	2.27
	9	235	8	1880	177.75	9.45
	5	210	8	1680	25.70	1.53
	4	210	8	1680	10.00	0.60
	7	210	8	1680	99.30	5.91
Minneapolis	15	220	8	1760	51.00	2.90
	17	220	8	1760	60.00	3.41
	13	220	8	1760	18.55	1.05
	12	220	8	1760	14.60	0.83
	16	220	8	1760	75.25	4.28
	21	220	8	1760	62.67	3.56
	22	220	8	1760	22.05	1.25
	23	220	8	1760	14.82	0.84
	28	220	8	1760	29.75	1.69
	30	220	8	1760	54.25	3.08
Northfield	39	220	8	1760	99.67	5.66
	37	220	8	1760	123.50	7.02
	37ta ^a	190	8	1520	33.50	2.20
	39ta	190	8	1520	91.33	6.01
Spirit Lake	42	220	8	1760	73.33	4.17
	41	220	8	1760	354.67	20.15

^aDenotes teacher advisor.

Table 4. Estimates of percent of time in general administration, supervision, and teacher evaluation

School organization	SIM ID	Percent general administration	Percent supervision	Percent teacher evaluation
Breck	2	50	30	20
	1	90	0	10
Edina	10	40	35	25
	9	50	25	25
	5	50	25	25
	4	55	25	20
	7	60	20	20
Minneapolis	15	38	55	7
	17	50	25	25
	13	40	59	1
	12	40	40	20
	16	60	30	10
	21	35	40	25
	22	30	60	10
	23	25	60	15
	28	20	75	5
	30	25	50	25
Northfield	39	65	20	15
	37	37	40	23
	37ta ^a			20
	39ta			17
Spirit Lake	42	45	50	5
	41	50	15	35

^aDenotes teacher advisor. Only evaluation time is considered.

accurate estimates of percentages of time spent in teacher evaluation would be those derived from Table 3 (T%). Consequently, the difference between the T% figure and teacher evaluation estimates was divided equally between general administration and supervision estimates. For example, a subject could estimate general administration, supervision, and teacher evaluation time commitments at 50, 20, and 20 percent, respectively, and generate a T% figure of only 5 percent, based on data from Table 2. Applying the logic of dividing the difference equally between general administration and supervision, new values of 60, 35, and 5 percent would be assigned to general administration, supervision, and teacher evaluation, respectively. Throughout the present investigation, data on teacher advisors (from Northfield, Minnesota in the SIM school organizations) were coded for teacher evaluation time only, since those individuals were not administrators. General administration and supervision data were calculated on administrators across the sample. Results of the procedure for recalculating percentages of time spent in general administration, supervision, and teacher evaluation are included in Table 5.

To arrive at cost comparisons across SIM, totals and averages were computed from the 21 buildings in the sample and compared to the Instructional General Fund Budget (IB) totals. Costs of SIM were added to IB totals since it was assumed that the training received by administrators and teacher advisors as part of SIM was instrumental in the evaluation process, both in terms of skill in observation and report writing, and in the commitment of time. Means were compared

Table 5. Recalculated percentages of time in general administration, supervision, and teacher evaluation

School organization	SIM ID	New percent general administration	New percent supervision	New percent teacher evaluation
Breck	2	56.01	36.01	7.99
	1	91.94	1.94	6.11
Edina	10	51.36	46.36	2.27
	9	57.77	32.77	9.45
	5	61.74	36.74	1.53
	4	64.70	34.70	0.60
	7	67.04	27.04	5.91
Minneapolis	15	40.05	57.05	2.90
	17	60.80	35.80	3.41
	13	39.97	58.97	1.05
	12	49.59	49.59	0.83
	16	62.86	32.86	4.28
	21	45.72	50.72	3.56
	22	34.37	64.37	1.25
	23	32.08	67.08	0.84
	28	21.65	76.65	1.69
30	35.96	60.96	3.08	
Northfield	39	69.67	24.67	5.66
	37	44.99	47.99	7.02
	37ta ^a			2.20
	39ta			6.01
Spirit Lake	42	45.42	50.42	4.17
	41	57.42	22.42	20.15

^aDenotes teacher advisor. Only evaluation time is considered.

within the stated hypothesis structure and tested for significance using t scores at the .05 level. Pearson product-moment correlation was used to compare the stated estimate of percent of time in teacher evaluation (TE) with the percent of time as computed through totaling separate evaluation activities (T%).

Follow-up interviews were conducted with each school organization business manager to verify administrator salaries, budget document questions, and proper coding of categorical funding for reducing the general fund budget to IB status. It became evident through the research process that, in spite of the detail achieved, even more specific information might be useful to individual school organizations in applying the model. To test the elaboration of the model, Edina, Minnesota Public Schools of the SIM group were used to expand the model to include fixed costs with administrative salaries, as well as prorations of clerical and central office salaries in the evaluation process. Data for the elaboration of the model were provided during an additional onsite visit to Edina, where the superintendent and business manager were interviewed, and the prorations of time were established through their input. Such an expansion of the model developed in the present study provided an even more accurate assessment of costs in teacher evaluation for the SIM buildings in Edina.

Application of formulas to the data demonstrated that the concepts utilized in the model for the present investigation were successful. Findings and results of data analysis follow in Chapter IV.

CHAPTER IV. ANALYSIS OF THE FINDINGS

In order to test the hypotheses for the present investigation, it was necessary to compute the total costs for general administration, supervision, and teacher evaluation by administrator in each of the school organizations. Percentages of time, as calculated in Table 5, were multiplied by total contract hours to establish the number of hours each administrator or teacher advisor spent in general administration, supervision, or teacher evaluation. Costs for each area were calculated by dividing hours per activity by total contract hours, and multiplying the resulting percentage by each administrator or teacher advisor's salary.

Table 6 lists hours spent and dollar costs for general administration, supervision, and evaluation by school organization, and by administrator or teacher advisor. Only evaluation hours and costs were calculated for teacher advisors, since those two individuals from Northfield were teachers who did not assume general administration or supervision duties. As shown in Table 6, hours spent in teacher evaluation varied from a low of 10 hours at the elementary level to a high of 355. The average time spent in teacher evaluation at the elementary level was 73 hours. Secondary school evaluation time was somewhat higher, with an average of 86 hours and a range from 15 to 178 hours. Not surprisingly, general administration costs were the highest, followed by supervision and teacher evaluation, in that order.

Next, administrative costs for general administration, supervision, and teacher evaluation were compared to the Instructional Budget (IB)

Table 6. Computation of costs of general administration, supervision, and teacher evaluation for the SIM school organizations

School organization	Building ID	School type	Hrs. gen. admin.	Cost gen. admin.	Hrs. sup.	Cost of sup.	Hours in eval.	Cost of eval.
Breck	2	Secondary	1,008	15,962	648	10,262	144	2,276
	1	Elementary	1,655	31,813	35	673	110	2,114
Edina	10	Secondary	965	25,322	872	22,857	43	1,121
	9	Secondary	1,086	28,482	616	16,157	178	4,661
	5	Elementary	1,037	26,484	617	15,759	26	657
	4	Elementary	1,087	28,016	583	15,026	10	258
	7	Elementary	1,127	28,024	454	11,305	99	2,471
Minneapolis	15	Secondary	705	17,931	1,004	25,542	51	1,298
	17	Elementary	1,070	26,618	630	15,673	60	1,493
	13	Elementary	704	17,502	1,038	25,821	18	461
	12	Secondary	873	22,565	872	22,565	15	378
	16	Secondary	1,106	29,260	579	15,296	75	1,991
	21	Elementary	805	20,343	892	22,567	63	1,584
	22	Elementary	605	15,634	1,133	29,278	22	570
	23	Elementary	565	14,305	1,180	29,913	15	376
	28	Elementary	381	9,871	1,349	34,943	30	771
	30	Elementary	633	16,687	1,073	28,289	54	1,430
Northfield	39	Secondary	1,226	27,119	434	9,602	100	2,204
	37	Elementary	792	15,500	844	16,533	124	2,417
	37ta ^a	Elementary					33	453
	39ta ^a	Secondary					91	1,597
Spirit Lake	42	Secondary	800	14,171	887	15,732	73	1,300
	41	Elementary	1,010	18,564	395	7,249	355	6,514
Elementary averages			882	20,720	786	19,464	73	1,541
Secondary averages			863	20,090	657	15,335	86	1,870
Averages for SIM school organizations			916	21,437	768	18,621	78	1,669

^aDenotes teacher advisor.

for each building. Table 7 displays the results of the calculations. Converting time spent in general administration, supervision, and teacher evaluation to portions of salaries for principals and division heads provided interesting comparisons. Elementary principals and division heads averaged \$20,720 per building for general administration, with a high of \$31,813 and a low of \$9,871. These salary computations converted to 2.32 percent of the elementary buildings' Instructional Budget (IB) for general administration costs. Secondary principals and division heads, on the other hand, averaged \$22,602 for general administration, with a range from \$29,260 to \$15,962. Even though the secondary building average for general administration was higher than that of the elementary buildings, the secondary buildings in the sample spent only 1.76 percent of the IB. Overall, the SIM school organizations spent 2.06 percent of the IB for general administration, with an average cost of \$21,437 per building.

Similarly, the costs of supervision demanded greater commitments of IB dollars for elementary buildings than for secondary buildings. For example, the elementary SIM buildings averaged \$19,464 for supervision, which amounted to 2.18 percent of the IB. A high of \$34,943 and a low of \$673 revealed a tremendous variation in costs for supervision among the elementary buildings of SIM. Secondary buildings were more consistent in costs for supervision, with a range of \$25,542 to \$9,602, and an average of \$17,252. These costs translated to 1.35 percent of the IB. The 21 buildings included in the SIM group spent

Table 7. Computation of percentages of instructional budget totals spent in general administration, supervision, and teacher evaluation

School organization	Building ID	School type	Inst. budget	Cost gen. admin.	Percent of inst. budget	Cost of sup.	Percent of inst. budget	Cost of eval.	Percent of inst. budget
Breck	2	Secondary	673,133	15,962	2.37	10,262	1.52	2,276	0.34
	1	Elementary	807,760	31,813	3.94	673	0.08	2,114	0.26
Edina	10	Secondary	1,961,548	25,322	1.29	22,857	1.17	1,121	0.06
	9	Secondary	1,409,005	28,482	2.02	16,157	1.15	4,661	0.33
	5	Elementary	733,147	26,484	3.61	15,759	2.15	656	0.09
	4	Elementary	916,048	28,016	3.06	15,026	1.64	258	0.03
	7	Elementary	929,982	28,025	3.01	11,305	1.22	2,471	0.27
Minneapolis	15	Secondary	1,695,530	17,931	1.06	25,542	1.51	1,297	0.08
	17	Elementary	979,033	26,619	2.72	15,673	1.60	1,493	0.15
	13	Elementary	1,075,832	17,502	1.63	25,821	2.40	461	0.04
	12	Secondary	1,539,500	22,565	1.47	22,565	1.47	378	0.02
	16	Secondary	1,575,834	29,260	1.86	15,296	0.97	1,990	0.13
	21	Elementary	1,462,613	20,343	1.39	22,567	1.54	1,584	0.11
	22	Elementary	739,045	15,634	2.12	29,278	3.96	570	0.08
	23	Elementary	1,137,175	14,305	1.26	29,913	2.63	375	0.03
	28	Elementary	650,523	9,871	1.52	34,943	5.37	771	0.12
	30	Elementary	936,102	16,687	1.78	28,289	3.02	1,430	0.15
Northfield	39	Secondary	1,086,277	27,119	2.50	9,602	0.88	2,204	0.35
	37	Elementary	464,577	15,500	3.34	16,533	3.56	2,417	0.62
	37ta ^a	Elementary						453	
	39ta ^a	Secondary						1,597	
Spirit Lake	42	Secondary	317,306	14,171	4.47	15,732	4.96	1,300	0.41
	41	Elementary	768,759	18,564	2.41	7,249	0.94	6,514	0.85
Elementary averages			892,354	20,720	2.32	19,464	2.18	1,541	0.17
Secondary averages			1,282,267	22,602	1.76	17,252	1.35	1,869	0.15
Averages for SIM school org.			1,040,892	21,437	2.06	18,621	1.79	1,828	0.18

^aDenotes teacher advisor.

1.79 percent of the total IB budget for supervision, with an average cost of \$18,621.

Costs of teacher evaluation averaged \$1,541 per elementary building, with a high of \$6,514 and a low of \$258. These costs amounted to a .17 percent commitment of IB dollars for elementary buildings. Secondary teacher evaluation costs ranged from \$4,661 to \$378 among the SIM buildings, with an average cost of \$1,869. IB costs for secondary teacher evaluation were similar to those of the elementary buildings. They totaled .15 percent of the IB totals. SIM school organizations as a whole spent an average of \$1,828 per building on teacher evaluation; .18 percent of the total IB.

Further definition was provided by including SIM costs in the total costs of evaluation. Dollar amounts for services provided by the SIM project staff (1982-83) were added by building and school organization to ascertain the most accurate costs for teacher evaluation possible using the model for the present investigation. These costs included all data systems created for reporting performance of teachers, administrators, and students; training of teacher evaluators to use such data; and staff development experiences provided for SIM teachers. The teacher training centered on effective teaching as defined by each school organization's performance standards. Table 8 shows these computations. A total SIM cost of \$86,867 for teacher evaluation resulted, with Breck spending \$10,571, Edina \$20,010, Minneapolis \$33,918, Northfield \$10,585, and Spirit Lake \$11,783. Converting these dollar amounts to percentages of IBs per school organization

Table 8. Computation of costs of teacher evaluation as percentages of instructional budgets in SIM school organizations

School organization	Building ID	School type	Inst. budget	Cost of eval.	Cost of SIM	Total cost of eval.	Percent of inst. budget
Breck	2	Secondary	673,133	2,276			0.34
	1	Elementary	807,760	2,114			0.26
	Organization totals			1,480,893	4,390	6,181	\$10,571
Edina	10	Secondary	1,961,548	1,121			0.06
	9	Secondary	1,409,005	4,661			0.33
	5	Elementary	733,147	657			0.09
	4	Elementary	916,048	258			0.03
	7	Elementary	929,982	2,471			0.27
Organization totals			5,949,730	9,168	10,842	\$20,010	0.34
Minneapolis	15	Secondary	1,695,530	1,298			0.08
	17	Elementary	979,033	1,493			0.15
	13	Elementary	1,075,832	461			0.04
	12	Secondary	1,539,500	378			0.02
	16	Secondary	1,575,834	1,991			0.13
	21	Elementary	1,462,613	1,584			0.11
	22	Elementary	739,045	570			0.08
	23	Elementary	1,137,175	376			0.03
	28	Elementary	650,523	771			0.12
30	Elementary	936,102	1,430			0.15	
Organization totals			11,791,187	10,352	23,566	\$33,918	0.29
Northfield	39	Secondary	1,086,277	2,204			0.35
	37	Elementary	464,577	2,417			0.62

Table 8. Continued

School organization	Building ID	School type	Inst. budget	Cost of eval.	Cost of SIM	Total cost of eval.	Percent of inst. budget
	37ta ^a	Elementary		453			
	39ta ^a	Secondary		1,597			
	Organization totals		1,550,854	6,671	3,914	\$10,585	0.68
Spirit Lake	42	Secondary	317,306	1,300			0.41
	41	Elementary	768,759	6,514			0.85
	Organization totals		1,086,065	7,814	3,969	\$11,783	1.08
Totals SIM school organizations			21,858,729	\$38,395	48,472	\$86,867	0.40

^aDenotes teacher advisor.

resulted in a .71 percent commitment of IB for teacher evaluation in Breck, .34 percent in Edina, .29 percent in Minneapolis, .68 percent in Northfield, and 1.08 percent in Spirit Lake. It should be noted that Spirit Lake's costs were influenced greatly by the evaluation efforts put forth in the elementary building, where the principal spent over 20 percent of his/her contract hours in teacher evaluation activities, more than any other principal, division head, or teacher advisor in the sample. Across the 21 SIM buildings included in the present study, only .40 percent of the IB was spent on teacher evaluation, including the costs of SIM!

Edina Schools were used to expand the model for disaggregating costs of administration in teacher evaluation. Edina's business manager and superintendent provided the necessary estimates of central office personnel and support time, as well as a figure of \$300 for printing of SIM materials for distribution among the staff and patrons of the school district. Table 9 depicts the resultant costs when prorations of clerical time per building, prorations of central office personnel administration and clerical time, fixed costs for all administrative respondents, and costs of SIM supplies and services were added. Even with these additional costs, the percent of IB spent for teacher evaluation rose from .31 percent to only .51 percent for the five Edina buildings included in the sample, with a total cost of \$30,458 for teacher evaluation.

Next, costs of general administration were computed by administrator, by building, and by school organization (see Table 10). Numbers of

Table 9. Computation of costs of teacher evaluation as a percent of instructional budget -- Edina
(clerical, central office, and fixed costs included)

Building ID	School type	Inst. budget	Cost of eval.	Cost of clerical	Cost of central office	Cost of SIM	Total cost of eval.	Percent of inst. budget
10	Secondary	1,961,548	1,307	569				0.10
9	Secondary	1,409,005	5,441	3,457				0.63
5	Elementary	733,147	783	204				0.13
4	Elementary	916,048	310	67				0.04
7	Elementary	929,982	2,956	697				0.39
Organization totals		5,949,730	10,797	4,994	3,525	11,142	\$30,458	0.51

Table 10. Computation of costs of general administration among individual SIM school organizations, and across the entire SIM group

School organization	Building ID	School type	No. of staff	Contract hours	Percent gen. admin.	Hrs. gen. admin.	Admin. salary	Cost gen. admin.	Cost per teacher
Breck	2	Secondary	25	1,800	56.01	1,008	28,500	15,962	638
	1	Elementary	30	1,800	91.94	1,655	34,600	31,813	1,060
Breck total gen. admin., average cost per teacher								\$47,775	\$869
Edina	10	Secondary	56	1,880	51.36	656	49,300	25,322	452
	9	Secondary	38	1,880	57.77	1,086	49,300	28,482	750
	5	Elementary	24	1,680	61.74	1,037	42,900	26,484	1,104
	4	Elementary	30	1,680	64.70	1,087	43,300	28,016	934
	7	Elementary	32	1,680	67.04	1,127	41,800	28,024	876
Edina total gen. admin., average cost per teacher								\$136,328	\$757
Minneapolis	15	Secondary	60	1,760	40.05	705	44,771	17,931	299
	17	Elementary	43	1,760	60.80	1,070	43,784	26,618	619
	13	Elementary	44	1,760	39.97	704	43,784	17,502	398
	12	Secondary	51	1,760	49.59	873	45,508	22,565	442
	16	Secondary	53	1,760	62.86	1,106	46,547	29,260	552
	21	Elementary	48	1,760	45.72	805	44,494	20,343	424
	22	Elementary	32	1,760	34.37	605	45,482	15,634	489
	23	Elementary	39	1,760	32.08	565	44,594	14,305	367
	28	Elementary	26	1,760	21.65	381	45,585	9,871	380
	30	Elementary	35	1,760	35.96	633	46,406	16,687	477
Minneapolis total gen. admin., average cost per teacher								\$190,716	\$442

Table 10. Continued

School organization	Building ID	School type	No. of staff	Contract hours	Percent gen. admin.	Hrs. gen. admin.	Admin. salary	Cost gen. admin.	Cost per teacher
Northfield	39	Secondary	40	1,760	69.67	1,226	38,926	27,119	678
	37	Elementary	21	1,760	44.99	792	34,450	15,500	738
Northfield total gen. admin., average cost per teacher								\$42,619	\$699
Spirit Lake	42	Secondary	12	1,760	45.42	799	31,203	14,171	1,181
	41	Elementary	38	1,760	57.42	1,011	32,327	18,564	489
Spirit Lake total gen. admin., average cost per teacher								\$32,735	\$655
SIM school organizations: Total cost gen. admin., average cost per teacher								\$450,173	\$579

staff used in the computations were obtained by inspecting staff directories for each school organization, and counting total numbers of teachers per building excluding those who were involved in federal programs. Both SIM and non-SIM teachers were included in building teacher totals for the purposes of computing general administration costs. By multiplying each administrator's salary by the previously calculated percentage of time spent on general administration (Table 7), the total cost of general administration per building was delineated. Each building cost was divided by the total number of teachers in the building to arrive at the cost per teacher for general administration. Results of the computations showed total costs for general administration of \$47,775 for Breck, \$136,328 for Edina, \$190,716 for Minneapolis, \$42,619 for Northfield, and \$32,735 for Spirit Lake, with average per teacher costs of \$869 for Breck, \$757 for Edina, \$442 for Minneapolis, \$699 for Northfield, and \$655 for Spirit Lake. The SIM school organizations in total spent \$450,173 for general administration, with an average cost of \$579 per teacher.

Supervision costs were computed in a like manner, as is demonstrated in Table 11. By multiplying the percentage of time committed to supervision by each administrator's salary, costs of supervision per building were computed. Cost per teacher per building was arrived at by dividing the cost per building by the number of staff in each building. Breck's average supervision cost per teacher was \$199, Edina \$451, Minneapolis \$580, Northfield \$428, and Spirit Lake \$460, with school organization costs of \$10,935 for Breck, \$81,104 for Edina, \$249,887 for Minneapolis,

Table 11. Computation of costs of supervision among individual SIM school organizations, and across the entire SIM group

School organization	Building ID	School type	No. of staff	Contract hours	Percent sup.	Hrs. sup.	Admin. salary	Cost of sup.	Cost per teacher
Breck	2	Secondary	25	1,800	36.01	648	28,500	10,262	410
	1	Elementary	30	1,800	1.94	35	34,600	673	22
Breck total supervision, average cost per teacher								\$10,935	\$199
Edina	10	Secondary	56	1,880	46.36	872	49,300	22,857	408
	9	Secondary	38	1,880	32.77	616	49,300	16,157	425
	5	Elementary	24	1,680	36.74	617	42,900	15,759	657
	4	Elementary	30	1,680	34.7	583	43,300	15,026	501
	7	Elementary	32	1,680	27.04	454	41,800	11,305	353
Edina total supervision, average cost per teacher								\$81,104	\$451
Minneapolis	15	Secondary	60	1,760	57.05	1,004	44,771	25,542	426
	17	Elementary	43	1,760	35.8	630	43,784	15,673	364
	13	Elementary	44	1,760	58.97	1,038	43,784	25,821	587
	12	Secondary	51	1,760	49.59	872	45,508	22,565	442
	16	Secondary	53	1,760	32.86	579	46,547	15,296	289
	21	Elementary	48	1,760	50.72	892	44,494	22,567	470
	22	Elementary	32	1,760	64.37	1,133	45,482	29,278	915
	23	Elementary	39	1,760	67.08	1,180	44,594	29,913	767
	28	Elementary	26	1,760	76.65	1,349	45,585	34,943	1,344
	30	Elementary	35	1,760	60.96	1,073	46,406	28,289	808
Minneapolis total supervision, average cost per teacher								\$249,887	\$580

Table 11. Continued

School organization	Building ID	School type	No. of staff	Contract hours	Percent sup.	Hrs. sup.	Admin. salary	Cost of sup.	Cost per teacher
Northfield	39	Secondary	40	1,760	21.42	434	38,926	9,602	240
	37	Elementary	21	1,760	41.64	844	34,450	16,533	787
Northfield total supervision, average cost per teacher								\$26,135	\$428
Spirit Lake	42	Secondary	12	1,760	50.42	887	31,203	15,732	1,311
	41	Elementary	38	1,760	22.42	395	32,327	7,249	191
Spirit Lake total supervision, average cost per teacher								\$22,981	\$460
SIM school organizations: Total cost supervision, average cost per teacher								\$391,042	\$503

\$26,135 for Northfield, and \$22,981 for Spirit Lake. Across SIM, \$391,042 was spent on supervision, with an average cost per teacher of \$503.

The costs of teacher performance evaluation were analyzed dividing the cost of evaluation for each building utilizing teacher performance evaluation methods by the number of teachers who were formally evaluated. Edina spent \$9,168 for teacher performance evaluation, Minneapolis \$10,352, and the secondary building in Spirit Lake \$1,300. An average cost per teacher of \$255 resulted in Edina, \$116 in Minneapolis, and \$108 for the secondary building in Spirit Lake. Table 12 shows a total teacher performance evaluation cost of \$20,820, with an average cost of \$152 per SIM teacher formally evaluated via teacher performance evaluation methods. The elementary building from Spirit Lake was excluded, because the principal practiced the clinical mode of teacher evaluation.

The three SIM buildings which utilized clinical supervision techniques are listed in Table 13. Computations showed a total cost of \$4,390 and an average cost of \$80 per teacher formally evaluated in Breck, and a total cost of \$6,514 and \$171 per teacher formally evaluated in the Spirit Lake elementary building. Average clinical supervision costs per SIM teacher formally evaluated was determined to be \$117, with a total expenditure of \$10,904 for the three buildings utilizing clinical supervision methods. The Spirit Lake secondary building was excluded, because the principal practiced the teacher performance evaluation mode of teacher evaluation.

Table 12. Computation of the costs of teacher performance evaluation

School organization	Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
Edina	10	Secondary	9	1,880	2.27	43	49,300	1,121	125
	9	Secondary	9	1,880	9.45	178	49,300	4,661	518
	5	Elementary	6	1,680	1.53	26	42,900	657	109
	4	Elementary	6	1,680	0.60	10	43,300	258	43
	7	Elementary	6	1,680	5.91	99	41,800	2,471	412
Edina total teacher performance evaluation, average cost per teacher								\$9,168	\$255
Minneapolis	15	Secondary	9	1,760	2.90	51	44,771	1,298	144
	17	Elementary	10	1,760	3.41	60	43,784	1,493	149
	13	Elementary	7	1,760	1.05	18	43,784	461	66
	12	Secondary	6	1,760	0.83	15	45,508	378	63
	16	Secondary	21	1,760	4.28	75	46,547	1,991	95
	21	Elementary	8	1,760	3.56	63	44,494	1,584	198
	22	Elementary	7	1,760	1.25	22	45,482	570	81
	23	Elementary	7	1,760	0.84	15	44,594	376	54
	28	Elementary	7	1,760	1.69	30	45,585	771	110
	30	Elementary	7	1,760	3.08	54	46,406	1,430	204
Minneapolis total teacher performance evaluation, average cost per teacher								\$10,352	\$116
Spirit Lake	42	Secondary	12	1,760	4.17	73	31,203	1,300	108
Spirit Lake total teacher performance evaluation, average cost per teacher								\$1,300	\$108
SIM school organizations: Total cost teacher performance evaluation, average cost per teacher								\$20,820	\$152

Table 13. Computation of the costs of clinical supervision

School organization	Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
Breck	2	Secondary	25	1,800	7.99	144	28,500	2,276	91
	1	Elementary	30	1,800	6.11	110	34,600	2,114	70
Breck total clinical supervision, average cost per teacher								\$4,390	\$80
Spirit Lake	41	Elementary	38	1,760	20.15	355	32,327	6,514	171
Spirit Lake clinical supervision, average cost per teacher								\$6,514	\$171
SIM school organizations: Total cost clinical supervision, average cost per teacher								\$10,904	\$117

Northfield's teacher evaluation/teacher advisor methods were analyzed next to arrive at average costs. In this school organization, some teachers in each building were assigned to instructional advisement. They helped with formative procedures while leaving summative evaluation to the building principal. By employing the same methods as were used in extracting costs of teacher performance evaluation and clinical supervision (Tables 11 and 12), an average cost of \$278 per teacher formally evaluated was determined, with a total cost of \$6,672. Results of these calculations are found in Table 14.

As data were analyzed, it became evident that differences in administrative salaries had a large impact on computed costs, since the teacher evaluators' salaries ranged from \$28,500 to \$49,300. Edina and Minneapolis, for a number of reasons, paid their administrators significantly more than the other school organizations in the present investigation. When computing the costs of teacher performance evaluation, clinical supervision, and teacher evaluation/teacher advisor methods using the average salary of the 21 administrators who comprised the sample, a much different picture of costs emerged from that presented by using local budget salaries. Table 15 enumerates the results of computing costs of teacher performance evaluation per teacher formally evaluated when average salaries of \$41,789 were applied to the time committed to the evaluation process. Edina's total costs became \$8,259 (compared to \$9,168 using budget salaries), with an average cost per teacher of \$229 (as compared to \$255). A total cost of \$9,568 resulted

Table 14. Computation of the cost of teacher evaluation/teacher advisor method of evaluation as utilized in Northfield

School organization	Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
Northfield	39	Secondary	12	1,760	5.66	99	38,926	2,205	184
	37	Elementary	3	1,760	7.02	124	34,450	2,417	806
		Elementary ^a	3	1,520	2.20	33	20,537	453	151
		Secondary ^a	6	1,520	6.01	91	26,588	1,597	266
Northfield total teacher evaluation/teacher advisor, average cost per teacher								\$6,672	\$278

^aDenotes teacher advisor.

Table 15. Computation of the costs of teacher performance evaluation using the average administrative salary for SIM school organization principals/division heads

School organization	Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
Edina	10	Secondary	9	1,880	2.27	43	41,789	950	106
	9	Secondary	9	1,880	9.45	178	41,789	3,951	439
	5	Elementary	6	1,680	1.53	26	41,789	639	107
	4	Elementary	6	1,680	0.60	10	41,789	249	42
	7	Elementary	6	1,680	5.91	99	41,789	2,470	412
Edina total teacher performance evaluation, average cost per teacher								\$8,259	\$229
Minneapolis	15	Secondary	9	1,760	2.90	51	41,789	1,211	135
	17	Elementary	10	1,760	3.41	60	41,789	1,425	143
	13	Elementary	7	1,760	1.05	18	41,789	440	63
	12	Secondary	6	1,760	0.83	15	41,789	347	58
	16	Secondary	21	1,760	4.28	75	41,789	1,787	85
	21	Elementary	8	1,760	3.56	63	41,789	1,488	186
	22	Elementary	7	1,760	1.25	22	41,789	524	75
	23	Elementary	7	1,760	0.84	15	41,789	352	50
	28	Elementary	7	1,760	1.69	30	41,789	706	101
	30	Elementary	7	1,760	3.08	54	41,789	1,288	184
Minneapolis total teacher performance evaluation, average cost per teacher								\$9,568	\$108
Spirit Lake	42	Secondary	12	1,760	4.17	73	41,789	1,741	145
Spirit Lake total teacher performance evaluation, average cost per teacher								\$1,741	\$145
SIM school organizations: Total cost teacher performance evaluation, average cost per teacher									\$143

in Minneapolis (compared to \$10,352), with an average cost per teacher of \$108 (compared to \$116). Spirit Lake's secondary building total costs were \$1,741 (as compared to \$1,300), with an average cost per teacher of \$145 (compared to \$108). The overall impact of these calculations is highlighted in the fact that an average cost per SIM teacher for teacher performance evaluation of \$152 using budget salary amounts became \$143 per teacher when the average SIM administrator salary was inserted in the formula.

An especially large difference in costs resulted when average SIM administrator salaries were applied to the costs of clinical supervision. Table 16 explains those differences. Breck's total costs rose from \$4,390 (using budget salaries) to \$5,891 (using average SIM salaries), and the average cost per teacher formally evaluated from \$80 to \$107. Likewise, the costs for clinical supervision in the Spirit Lake elementary building rose from \$6,514 to \$8,421, with the average cost per teacher formally evaluated rising from \$171 to \$222. Overall, the total costs of clinical supervision for SIM rose from \$10,904 to \$14,312, with the average cost per teacher formally evaluated increasing from \$117 to \$154. Clearly, there was a direct impact on evaluation costs per teacher when average SIM administrative salaries were utilized. Results are contained in Table 16.

Similarly, the costs of Northfield's teacher evaluation/teacher advisor methods were computed using average SIM administrative salaries. Rather than an average cost of \$278 per teacher formally evaluated (using budget salaries), an average cost of \$306 was calculated (using

Table 16. Computation of the costs of clinical supervision using the average administrative salary for SIM school organization principals and division heads

School organization	Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
Breck	2	Secondary	25	1,800	7.99	144	41,789	3,337	133
	1	Elementary	30	1,800	6.11	110	41,789	2,554	85
Breck total clinical supervision, average cost per teacher								\$5,891	\$107
Spirit Lake	41	Elementary	38	1,760	20.15	355	41,789	8,421	222
Spirit Lake total clinical supervision, average cost per teacher								\$8,421	\$222
SIM school organizations: Total cost clinical supervision, average cost per teacher								\$14,312	\$154

average SIM administrator salaries), as is shown in Table 17. Total costs increased as well, from \$6,672 to \$7,349.

Although sample sizes were not sufficiently large to allow statistical inferences, the previous information suggests that all types of evaluation represented by SIM school organizations were relatively low in cost, with teacher performance evaluation being perhaps the most economical, when compared to other methods employed. It should be noted that computations of costs per teacher for evaluation were based on only those teachers who were formally evaluated during the 1982-83 school year.

Another direct impact on the costs of teacher evaluation involved the formal evaluation cycle implemented by each school organization. Some teachers were not formally evaluated in each building because multi-year appraisal cycles were used. Formal evaluation cycles varied from school organization to school organization as follows: Breck, all teachers every year; Edina, formal evaluation once every five years; Minneapolis, once every three years; Northfield, all teachers every year (with some teachers in the formal cycle, and others in observation only); and Spirit Lake, once every three years.

Hypotheses based on the original global postulates concerning general administration, supervision, teacher performance evaluation, and clinical supervision costs were tested next, utilizing t tests (selected because $n < 30$). Computations of general administration costs by size of building teaching staff are represented in Table 18. Dollar costs were arrived at by dividing the total costs of general

Table 17. Computation of the cost of teacher evaluation/teacher advisor method of evaluation as utilized in Northfield using the average administrative salary for SIM school organization principals and division heads

School organization	Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
Northfield	39	Secondary	12	1,760	5.66	99	41,789	2,367	197
	37	Elementary ^a	3	1,760	7.02	124	41,789	2,932	977
		Elementary ^a	3	1,520	2.20	33	20,537	453	151
		Secondary ^a	6	1,520	6.01	91	26,588	1,597	266
Northfield total teacher evaluation/teacher advisor, average cost per teacher								\$7,349	\$306

^aDenotes teacher advisor.

Table 18. Computation of general administration costs by size of teaching staff per building

Building ID	School type	No. of staff	Contract hours	Percent gen. admin.	Hrs. gen. admin.	Admin. salary	Cost gen. admin.	Cost per teacher
1	Elementary	30	1,800	91.94	1,655	34,600	31,813	1,060
2	Secondary	25	1,800	56.01	1,008	28,500	15,962	638
4	Elementary	30	1,680	64.70	1,087	43,300	28,016	934
5	Elementary	24	1,680	61.74	1,037	42,900	26,484	1,104
7	Elementary	32	1,680	67.04	1,127	41,800	28,024	876
22	Elementary	32	1,760	34.37	605	45,482	15,634	489
28	Elementary	26	1,760	21.65	381	45,585	9,871	380
37	Elementary	21	1,760	44.99	792	34,450	15,500	738
42	Secondary	12	1,760	45.42	800	31,203	14,171	1,181
Average cost/teacher in buildings with fewer than 35 teachers								\$799
9	Secondary	38	1,880	57.77	1,086	49,300	28,482	750
10	Secondary	56	1,880	51.36	965	49,300	25,322	452
12	Secondary	51	1,760	49.59	873	45,508	22,565	442
13	Elementary	44	1,760	39.97	704	43,784	17,502	398
15	Secondary	60	1,760	40.05	705	44,771	17,931	299
16	Secondary	53	1,760	62.86	1,106	46,547	29,260	552
17	Elementary	43	1,760	60.80	1,070	43,784	26,618	619
21	Elementary	48	1,760	45.72	805	44,494	20,343	424
23	Elementary	39	1,760	32.08	565	44,594	14,305	367
30	Elementary	35	1,760	35.96	633	46,406	16,687	477
39	Secondary	40	1,760	69.67	1,226	38,926	27,119	678
41	Elementary	38	1,760	57.42	1,010	32,327	18,564	489
Average cost/teacher in buildings with 35 or more teachers								\$486

administration per building by total numbers of teaching staff in the buildings representing each size category. The highest cost per teacher in buildings with fewer than 35 teachers was \$1,181, and the lowest was \$380, with an average cost of \$799 per teacher. In those buildings with 35 or more teachers, a high cost of \$750 per teacher resulted, and a low of \$299, with an average of \$486 per teacher.

Table 19 depicts the results of the t-test which was utilized to test the differences in average cost for general administration by building size. The F test for homogeneity of variance ($F = 2.09$) was not significant; therefore, the t-test formula for pooled variance was used. Computation of t yielded a value of 6.06, which was significant. At a level of $p = .05$, it was concluded that it costs significantly more (\$799 to \$486 per teacher) for general administration in SIM buildings with fewer than 35 teachers than it costs in buildings with 35 or more teachers.

Obviously, the practicing administrator would determine by visual inspection of the data that differences in general administration costs by building size were substantial. The t-test was used in the present investigation to provide a means for statistically testing hypotheses. For subsequent research where larger sample numbers are applied to the models of the present study, the statistical tests will be much more powerful.

Comparisons of general administration costs between public and non-public schools are shown in Table 20, although insufficient numbers of non-public school respondents were available in the present

Table 19. Statistical table comparing general administrative costs of SIM schools by size of teaching staff

Operational hypothesis: Average (mean) costs for general administration are equal between school buildings with fewer than 35 teachers, and those with 35 or more teachers.

Alternative hypothesis: Costs of general administration are not equal between school buildings with fewer than 35 teachers, and those with 35 or more teachers.

Alpha level: .05

Size fewer than 35

Size 35 or more

N = 9

N = 12

Mean = \$799

Mean = \$486

Variance = 69,741.51

Variance = 15,950.25

St. dev. = 264.09

St. dev. = 126.29

F test for homogeneity of variance = 2.09 (n.s.d. with 8, 11 d.f.)

Value of t = 6.06 (significant at the .05 level)

Conclusion: It costs significantly more for general administration in SIM buildings with fewer than 35 teachers than it costs in buildings with 35 or more teachers.

Table 20. Computation of general administration costs by public or non-public school organization

Building ID	School type	No. of staff	Contract hours	Percent gen. admin.	Hrs. gen. admin.	Admin. salary	Cost gen. admin.	Cost per teacher
4	Elementary	30	1,680	64.70	1,087	43,300	28,016	934
5	Elementary	24	1,680	61.74	1,037	42,900	26,484	1,104
7	Elementary	32	1,680	67.04	1,127	41,800	28,024	876
9	Secondary	38	1,880	57.77	1,086	49,300	28,482	750
10	Secondary	56	1,880	51.36	965	49,300	25,322	452
12	Secondary	51	1,760	49.59	873	45,508	22,565	442
13	Elementary	44	1,760	39.97	704	43,784	17,502	398
15	Secondary	60	1,760	40.05	705	44,771	17,931	299
16	Secondary	53	1,760	62.86	1,106	46,547	29,260	552
17	Elementary	43	1,760	60.80	1,070	43,784	26,618	619
21	Elementary	48	1,760	45.72	805	44,494	20,343	424
22	Elementary	32	1,760	34.37	605	45,482	15,634	489
23	Elementary	39	1,760	32.08	565	44,594	14,305	367
28	Elementary	26	1,760	21.65	381	45,585	9,871	380
30	Elementary	35	1,760	35.96	633	46,406	16,687	477
37	Elementary	21	1,760	44.99	792	34,450	15,500	738
39	Secondary	40	1,760	69.67	1,226	38,926	27,119	678
41	Elementary	38	1,760	57.42	1,010	32,327	18,564	489
42	Secondary	12	1,760	45.42	800	31,203	14,171	1,181
Average cost per public school teacher								\$557
1	Elementary	30	1,800	91.94	1,655	34,600	31,813	1,060
2	Secondary	25	1,800	56.01	1,008	28,500	15,962	638
Average cost per non-public school teacher								\$869

investigation to make statistical inferences. An interesting difference in cost was ascertained, with an average general administration cost of \$557 per teacher in the SIM public schools, and a cost of \$869 per teacher in the SIM non-public school organization, Breck. The highest cost per public school teacher was \$1,181, and the lowest was \$299. In Breck, the highest cost was \$1,060 per teacher, and the lowest cost was \$638.

Operational hypotheses were tested next. Comparisons of costs of general administration of elementary and secondary schools were computed in Table 21. Dividing the total cost of general administration for elementary buildings by the total number of teachers in those buildings yielded an average cost of \$609 per teacher. Applying the same logic to the secondary buildings of SIM resulted in an average cost per teacher of \$540. Costs ranged from a high of \$1,104 per teacher to a low of \$367 in the elementary buildings, and from \$1,181 to \$299 in the secondary buildings.

General administration costs of elementary and secondary schools were analyzed next and tested for mean differences. The F test for homogeneity of variance was not significant ($F = 1.03$); therefore, the t-test formula utilized was that for pooled variance. A t-test value of .60 was not significant, and it was concluded that there were no significant differences in general administration costs between elementary and secondary schools (\$609 versus \$540) among the SIM school organizations (see Table 22).

Table 21. Computation of general administration costs of elementary and secondary schools across the SIM group

Building ID	School type	No. of staff	Contract hours	Percent gen. admin.	Hrs. gen. admin.	Admin. salary	Cost gen. admin.	Cost per teacher
1	Elementary	30	1,800	91.94	1,655	34,600	31,813	1,060
4	Elementary	30	1,680	64.70	1,087	43,300	28,016	934
5	Elementary	24	1,680	61.74	1,037	42,900	26,484	1,104
7	Elementary	32	1,680	67.04	1,127	41,800	28,024	876
13	Elementary	44	1,760	39.97	704	43,784	17,502	398
17	Elementary	43	1,760	60.80	1,070	43,784	26,618	619
21	Elementary	48	1,760	45.72	805	44,494	20,343	424
22	Elementary	32	1,760	34.37	605	45,482	15,634	489
23	Elementary	39	1,760	32.08	565	44,594	14,305	367
28	Elementary	26	1,760	21.65	381	45,585	9,871	380
30	Elementary	35	1,760	35.96	633	46,406	16,687	477
37	Elementary	21	1,760	44.99	792	34,450	15,500	738
41	Elementary	38	1,760	57.42	1,010	32,327	18,564	489
Elementary average cost per teacher for general administration								\$609
2	Secondary	25	1,800	56.01	1,008	28,500	15,962	638
9	Secondary	38	1,880	57.77	1,086	49,300	28,482	750
10	Secondary	56	1,880	51.36	965	49,300	25,322	452
12	Secondary	51	1,760	49.59	873	45,508	22,565	442
15	Secondary	60	1,760	40.05	705	44,771	17,931	299
16	Secondary	53	1,760	62.86	1,106	46,547	29,260	552
39	Secondary	40	1,760	69.67	1,226	38,926	27,119	678
42	Secondary	12	1,760	45.42	800	31,203	14,171	1,181
Secondary average cost per teacher for general administration								\$540

Table 22. Statistical table comparing general administrative costs of SIM school organizations by level

Operational Hypothesis:	Average (mean) costs for general administration are equal between elementary and secondary school buildings among the SIM school organizations.	
Alternative hypothesis:	Costs of general administration are not equal between elementary and secondary school buildings among the SIM school organizations.	
Alpha level:	.05	
Elementary	Secondary	
N = 13	N = 8	
Mean = \$609	Mean = \$540	
Variance = 66,407.60	Variance = 62,844.25	
St. Dev. = 257.70	St. Dev. = 250.69	
F test for homogeneity of variance = 1.03 (n.s.d. with 12, 8 d.f.)		
Value of t = .60 (n.s.d. at the .05 level)		
Conclusion:	There are no significant differences in general administration costs between elementary and secondary school buildings among the SIM school organizations.	

Table 23 represents computations of supervision costs by size of teaching staff per building. Buildings were organized into two groups: those with fewer than 35 teachers, and those with 35 or more teachers. Costs per teacher by administrator were arrived at by dividing the cost of supervision for each building by the number of teachers in each building. To compute average costs of supervision per teacher by size of building (size of teaching staff), total costs of supervision for the buildings in each size category were divided by the total number of teachers represented in each category. Table 23 lists results of these calculations. An average supervision cost of \$644 per teacher in buildings with fewer than 35 teachers (from a high of \$1,344 per teacher to a low of \$22 per teacher), and \$443 per teacher in buildings with 35 or more teachers (from a high of \$808 to a low of \$191 per teacher) resulted.

Mean differences of supervision costs by size of teaching staff were analyzed next (see Table 24). The F test for homogeneity of variance was not significant; therefore, the pooled t formula was used. A value of $t = 1.43$ was not significant at the .05 level. It was concluded that there were no significant differences in costs of supervision between school buildings with fewer than 35 teachers and those buildings with 35 or more teachers.

Since there were not sufficient numbers of non-public administrators in the sample to allow statistical analyses, only descriptive data were organized to show the costs of supervision in public versus non-public school organizations. The same logic as used in testing

Table 23. Computation of supervision costs by size of teaching staff per building

Building ID	School type	No. of staff	Contract hours	Percent sup.	Hrs. sup.	Admin. salary	Cost of sup.	Cost per teacher
1	Elementary	30	1,800	1.94	35	34,600	673	22
2	Secondary	25	1,800	36.01	648	28,500	10,262	410
4	Elementary	30	1,680	34.70	583	43,300	15,026	501
5	Elementary	24	1,680	36.74	617	42,900	15,759	657
7	Elementary	32	1,680	27.04	454	41,800	11,305	353
22	Elementary	32	1,760	64.37	1,133	45,482	29,278	915
28	Elementary	26	1,760	76.65	1,349	45,585	34,943	1,344
37	Elementary	21	1,760	41.64	844	34,450	16,533	787
42	Secondary	12	1,760	50.42	887	31,203	15,732	1,311
Average cost/teacher in buildings with fewer than 35 teachers								\$644
9	Secondary	38	1,880	32.77	616	49,300	16,157	425
10	Secondary	56	1,880	46.36	872	49,300	22,857	408
12	Secondary	51	1,760	49.59	872	45,508	22,565	442
13	Elementary	44	1,760	58.97	1,038	43,784	25,821	587
15	Secondary	60	1,760	57.05	1,004	44,771	25,542	426
16	Secondary	53	1,760	32.86	579	46,547	15,296	289
17	Elementary	43	1,760	35.80	630	43,784	15,673	364
21	Elementary	48	1,760	50.72	892	44,494	22,567	470
23	Elementary	39	1,760	67.08	1,180	44,594	29,913	767
30	Elementary	35	1,760	60.96	1,073	46,406	28,289	808
39	Secondary	40	1,760	21.42	434	38,926	9,602	240
41	Elementary	38	1,760	22.42	395	32,327	7,249	191
Average cost/teacher in buildings with 35 or more teachers								\$443

Table 24. Statistical table comparing supervision costs of SIM schools by size of teaching staff

Operational hypothesis:	Average (mean) costs for supervision are equal between school buildings with fewer than 35 teachers, and those with 35 or more teachers.	
Alternative hypothesis:	Costs of supervision are not equal between school buildings with fewer than 35 teachers, and those with 35 or more teachers.	
Alpha level:	.05	
Size fewer than 35	Size 35 or more	
N = 9	N = 12	
Mean = \$644	Mean = \$443	
Variance = 171,943.77	Variance = 32,943.75	
St. dev. = 414.66	St. dev. = 181.50	
F test for homogeneity of variance = 2.28 (n.s.d. with 8, 11 d.f.)		
Value of t = 1.43 (n.s.d. at the .05 level)		
Conclusion:	There are no significant differences in costs of supervision between school buildings with fewer than 35 teachers, and those with 35 or more teachers.	

costs of supervision by size and level of school building was employed. Supervision costs per teacher for public versus non-public teachers are shown descriptively in Table 25, with public school teachers averaging a cost of \$526 per teacher, and non-public teachers \$199. The highest average cost per teacher in public school buildings was \$1,344, and the lowest \$191. A high of \$410 per teacher and a low of \$22 per teacher resulted in the non-public school buildings.

Elementary versus secondary supervision costs were calculated with the same building classifications as were used to compute general administration costs. The 13 elementary buildings generated a high cost of \$1,344 and a low cost of \$22 per teacher, with an average cost of \$572 per teacher. The eight secondary buildings averaged \$412 per teacher, with a high of \$1,311 and a low of \$240. Data are represented in Table 26.

Table 27 shows the results of statistical analysis of the data for average costs of supervision for elementary teachers and secondary teachers in the SIM school organizations. The pooled t formula was used to test the operational hypothesis, since the F test for homogeneity of variance was not significant ($F = 1.04$). A t value of 1.69 was not significant; therefore, it was concluded that there were no significant differences in supervision costs between elementary and secondary school buildings among the SIM school organizations.

As a next step, teacher performance evaluation costs by size of teaching staff were computed. Six buildings with fewer than 35 teachers and ten buildings with 35 or more teachers were included in the

Table 25. Computation of supervision costs by public or non-public school organizations

Building ID	School type	No. of staff	Contract hours	Percent sup.	Hrs. sup.	Admin. salary	Cost of sup.	Cost per teacher
4	Elementary	30	1,680	34.70	583	43,300	15,026	501
5	Elementary	24	1,680	36.74	617	42,900	15,759	657
7	Elementary	32	1,680	27.04	454	41,800	11,305	353
9	Secondary	38	1,880	32.77	616	49,300	16,157	425
10	Secondary	56	1,880	46.36	872	49,300	22,857	408
12	Secondary	51	1,760	49.59	872	45,508	22,565	442
13	Elementary	44	1,760	58.97	1,038	43,784	25,821	587
15	Secondary	60	1,760	57.05	1,004	44,771	25,542	426
16	Secondary	53	1,760	32.86	579	46,547	15,296	289
17	Elementary	43	1,760	35.80	630	43,784	15,673	364
21	Elementary	48	1,760	50.72	892	44,494	22,567	470
22	Elementary	32	1,760	64.37	1,133	45,482	29,278	915
23	Elementary	39	1,760	67.08	1,180	44,594	29,913	767
28	Elementary	26	1,760	76.65	1,349	45,585	34,943	1,344
30	Elementary	35	1,760	60.96	1,073	46,406	28,289	808
37	Elementary	21	1,760	41.64	844	34,450	16,533	787
39	Secondary	40	1,760	21.42	434	38,926	9,602	240
41	Elementary	38	1,760	22.42	395	32,327	7,249	191
42	Secondary	12	1,760	50.42	887	31,203	15,732	1,311
Average cost per public school teacher								\$526
1	Elementary	30	1,800	1.94	35	34,600	673	22
2	Secondary	25	1,800	36.01	648	28,500	10,262	410
Average cost per non-public school teacher								\$199

Table 26. Computation of supervision costs of elementary and secondary schools across the SIM group

Building ID	School type	No. of staff	Contract hours	Percent sup.	Hrs. sup.	Admin. salary	Cost of sup.	Cost per teacher
1	Elementary	30	1,800	1.94	35	34,600	673	22
4	Elementary	30	1,680	34.70	583	43,300	15,026	501
5	Elementary	24	1,680	36.74	617	42,900	15,759	657
7	Elementary	32	1,680	27.04	454	41,800	11,305	353
13	Elementary	44	1,760	58.97	1,038	43,784	25,821	587
17	Elementary	43	1,760	35.80	630	43,784	15,673	364
21	Elementary	48	1,760	50.72	892	44,494	22,567	470
22	Elementary	32	1,760	64.37	1,133	45,482	29,278	915
23	Elementary	39	1,760	67.08	1,180	44,594	29,913	767
28	Elementary	26	1,760	76.65	1,349	45,585	34,943	1,344
30	Elementary	35	1,760	60.96	1,073	46,406	28,289	808
37	Elementary	21	1,760	41.64	844	34,450	16,533	787
41	Elementary	38	1,760	22.42	395	32,327	7,249	191
Elementary average cost per teacher for supervision								\$572
2	Secondary	25	1,800	36.01	648	28,500	10,262	410
9	Secondary	38	1,880	32.77	616	49,300	16,157	425
10	Secondary	56	1,880	46.36	872	49,300	22,857	408
12	Secondary	51	1,760	49.59	872	45,508	22,565	442
15	Secondary	60	1,760	57.05	1,004	44,771	25,542	426
16	Secondary	53	1,760	32.86	579	46,547	15,296	289
39	Secondary	40	1,760	21.42	434	38,926	9,602	240
42	Secondary	12	1,760	50.42	887	31,203	15,732	1,311
Secondary average cost per teacher for supervision								\$412

Table 27. Statistical table comparing supervision costs of SIM school organizations by level

Operational hypothesis: Average (mean) costs for supervision are equal between elementary and secondary school buildings among the SIM school organizations.

Alternative hypothesis: Costs of supervision are not equal between elementary and secondary school buildings among the SIM school organizations.

Alpha level: .05

Elementary	Secondary
N = 13	N = 8
Mean = \$572	Mean = \$412
Variance = 108,229.46	Variance = 100,071.36
St. dev. = 328.98	St. dev. = 316.34

F test for homogeneity of variance = 1.04 (n.s.d. with 12, 8 d.f.)

Value of t = 1.69 (n.s.d. at the .05 level)

Conclusion: There are no significant differences in supervision costs between elementary and secondary school buildings among the SIM school organizations.

descriptive analysis. No statistical analysis was attempted, due to the small number of buildings with fewer than 35 teachers. Table 28 shows the data used for calculating costs of teacher performance evaluation. An average cost of \$137 per teacher in buildings with fewer than 35 teachers (with a range of \$412 to \$43 per teacher from high to low), and \$159 in buildings with 35 or more teachers (with a range of \$518 to \$54 per teacher) resulted.

Comparisons of costs of teacher performance evaluation between elementary and secondary schools are represented in Table 29. As was the case with the costs of teacher performance evaluation by school size, descriptive data were calculated due to the small numbers in the sample. The highest cost per elementary teacher was \$412, and the lowest \$43. An average cost of \$142 per elementary teacher formally evaluated, and \$163 per secondary teacher formally evaluated, resulted. Secondary costs per teacher ranged from \$518 to \$63 per teacher. There was no statistical analysis of differences in cost by type of school, since Breck (the non-public school organization in the sample) utilized clinical supervision for teacher evaluation processes.

Clinical supervision cost comparisons were limited, since only three administrators in SIM were involved. Table 30 shows the average cost of clinical supervision by size of building teaching staff. A cost of \$80 per teacher in buildings with fewer than 35 teachers (\$70 per teacher in one building and \$91 per teacher in the other), and \$171 in the building with 35 or more teachers resulted. No statistical

Table 28. Computation of teacher performance evaluation costs by size of teaching staff per building

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
4	Elementary	6	1,680	0.60	10	43,300	258	43
5	Elementary	6	1,680	1.53	26	42,900	657	110
7	Elementary	6	1,680	5.91	99	41,800	2,471	412
22	Elementary	7	1,760	1.25	22	45,482	570	81
28	Elementary	7	1,760	1.69	30	45,585	771	110
42	Secondary	12	1,760	4.17	73	31,203	1,300	108
Average cost/teacher in buildings with fewer than 35 teachers								\$137
9	Secondary	9	1,880	9.45	178	49,300	4,661	518
10	Secondary	9	1,880	2.27	43	49,300	1,121	125
12	Secondary	6	1,760	0.83	15	45,508	378	63
13	Elementary	7	1,760	1.05	18	43,784	461	66
15	Secondary	9	1,760	2.90	51	44,771	1,298	144
16	Secondary	21	1,760	4.28	75	46,547	1,991	95
17	Elementary	10	1,760	3.41	60	43,784	1,493	149
21	Elementary	8	1,760	3.56	63	44,494	1,584	198
23	Elementary	7	1,760	0.84	15	44,594	376	54
30	Elementary	7	1,760	3.08	54	46,406	1,430	204
Average cost/teacher in buildings with 35 or more teachers								\$159

Table 29. Computation of teacher performance evaluation costs of elementary and secondary schools across the SIM group

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
4	Elementary	6	1,680	0.60	10	43,300	258	43
5	Elementary	6	1,680	1.53	26	42,900	657	110
7	Elementary	6	1,680	5.91	99	41,800	2,471	412
13	Elementary	7	1,760	1.05	18	43,784	461	66
17	Elementary	10	1,760	3.41	60	43,784	1,493	149
21	Elementary	8	1,760	3.56	63	44,494	1,584	198
22	Elementary	7	1,760	1.25	22	45,482	570	81
23	Elementary	7	1,760	0.84	15	44,594	376	54
28	Elementary	7	1,760	1.69	30	45,585	771	110
30	Elementary	7	1,760	3.08	54	46,406	1,430	204
Elementary average cost per teacher for teacher performance evaluation								\$142
9	Secondary	9	1,880	9.45	178	49,300	4,661	518
10	Secondary	9	1,880	2.27	43	49,300	1,121	125
12	Secondary	6	1,760	0.83	15	45,508	378	63
15	Secondary	9	1,760	2.90	51	44,771	1,298	144
16	Secondary	21	1,760	4.28	75	46,547	1,991	95
42	Secondary	12	1,760	4.17	73	31,203	1,300	108
Secondary average cost per teacher for teacher performance evaluation								\$163

Table 30. Computation of clinical supervision costs by size of teaching staff per building

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
1	Elementary	30	1,800	6.11	110	34,600	2,114	70
2	Secondary	25	1,800	7.99	144	28,500	2,276	91
Average cost/teacher in buildings with fewer than 35 teachers								\$80
41	Elementary	38	1,760	20.15	355	32,327	6,514	171
Average cost/teacher in buildings with 35 or more teachers								\$171

analysis of differences in cost by size of teaching staff was attempted, due to the small sample numbers available.

Comparisons of clinical supervision costs of elementary and secondary schools across the SIM group are represented descriptively in Table 31. Average clinical supervision costs of \$127 per elementary teacher formally evaluated (\$70 per teacher in one building, and \$171 per teacher in the other), and \$91 per secondary teacher for the lone secondary building represented are shown.

The teacher evaluation/teacher advisor method of evaluation as utilized by Northfield was analyzed for costs per teacher by building size. Table 32 shows the results of the computation, with an average cost of \$478 per teacher formally evaluated in the building with 35 or fewer teachers, and \$211 per teacher formally evaluated in the building with 35 or more teachers. The elementary building included in the sample demonstrated a large variation in cost per teacher, with \$806 per teacher evaluated by the principal, and \$151 per teacher observed by the teacher advisor. Differences were also evident in the secondary building, although not quite so extreme. Average costs of \$184 per teacher evaluated by the principal, and \$266 per teacher observed by the teacher advisor resulted. At the secondary level, the principal's evaluation efforts were more expensive; at the elementary level, the reverse was true.

A descriptive view of elementary versus secondary costs of the teacher evaluation/teacher advisor method is represented in Table 33. An average cost of \$478 per elementary teacher formally evaluated and

Table 31. Computation of clinical supervision costs of elementary and secondary schools across the SIM group

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
1	Elementary	30	1,800	6.11	110	34,600	2,114	70
41	Elementary	38	1,760	20.15	355	32,327	6,514	171
Elementary average cost per teacher for clinical supervision								\$127
2	Secondary	25	1,800	7.99	144	28,500	2,276	91
Secondary average cost per teacher for clinical supervision								\$91

Table 32. Computation of teacher evaluation/teacher advisor costs by size of teaching staff per building

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
37	Elementary	3	1,760	7.02	124	34,450	2,417	806
	Elementary ^a	3	1,520	2.20	33	20,537	453	151
Average cost/teacher in buildings with 35 or fewer teachers								\$478
39	Secondary	12	1,760	5.66	99	38,926	2,205	184
	Secondary ^a	6	1,520	6.01	91	26,588	1,597	266
Average cost/teacher in buildings with 35 or more students								\$211

^aDenotes teacher advisor.

Table 33. Computation of teacher evaluation/teacher advisor costs of elementary and secondary schools in Northfield

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
37	Elementary ^a	3	1,760	7.02	124	34,450	2,417	806
	Elementary ^a	3	1,520	2.20	33	20,537	453	151
Elementary cost per teacher for teacher evaluation/teacher advisor								\$478
39	Secondary	12	1,760	5.66	99	38,926	2,205	184
	Secondary ^a	6	1,520	6.01	91	26,588	1,597	266
Northfield teacher evaluation/teacher advisor costs per teacher								\$211

^aDenotes teacher advisor.

\$211 per secondary teacher formally evaluated was calculated. These results, which represent precisely the same buildings, administrators, and teacher advisors as shown in Table 32, were not statistically analyzed due to insufficient sample numbers.

The final hypothesis tested involved a comparison of costs for teacher performance evaluation and clinical supervision. Insufficient numbers in the clinical supervision group prohibited computation of a t-test; however, the costs as listed in Table 34 merit notice. As was stated earlier in this study, the cost of \$152 per teacher in teacher performance evaluation, and \$117 per teacher in clinical supervision, became \$143 and \$154, respectively, when average SIM administrator salaries were inserted in the model formula. Ranges of costs per building were discussed earlier.

Regardless of which set of figures is chosen, all but one SIM administrator overestimated his/her commitment of time to teacher evaluation. Respondents were asked to estimate the percentage of their working time spent in general administration, supervision, and teacher evaluation (Table 4). When the average times per teacher for evaluation activities as estimated by SIM administrators and teacher advisors (found in Table 5) were totaled and converted to a percentage of contract hours, another estimate of time spent in teacher evaluation was ascertained. A copy of the survey instrument is included in the present study as the appendix. The figures as obtained through the survey instrument were used throughout the present investigation and served as "real" time figures. Comparing the original estimates of time in

Table 34. Computation of costs of teacher performance evaluation and clinical supervision across the SIM group

Building ID	School type	No. to eval.	Contract hours	Percent eval.	Eval. hours	Admin. salary	Cost of eval.	Cost per teacher
4	Elementary	6	1,680	0.60	10	43,300	258	43
5	Elementary	6	1,680	1.53	26	42,900	657	109
7	Elementary	6	1,680	5.91	99	41,800	2,471	412
9	Secondary	9	1,880	9.45	178	49,300	4,661	518
10	Secondary	9	1,880	2.27	43	49,300	1,121	125
12	Secondary	6	1,760	0.83	15	45,508	378	63
13	Elementary	7	1,760	1.05	19	43,784	461	66
15	Secondary	9	1,760	2.90	51	44,771	1,298	144
16	Secondary	21	1,760	4.28	75	46,547	1,991	95
17	Elementary	10	1,760	3.41	60	43,784	1,493	149
21	Elementary	8	1,760	3.56	63	44,494	1,584	198
22	Elementary	7	1,760	1.25	22	45,482	570	81
23	Elementary	7	1,760	0.84	15	44,594	376	54
28	Elementary	7	1,760	1.69	30	45,585	771	110
30	Elementary	7	1,760	3.08	54	46,406	1,430	204
42	Secondary	12	1,760	4.17	73	31,203	1,300	108
Average cost per teacher for teacher performance evaluation								\$152
1	Elementary	30	1,800	6.11	110	34,600	2,114	70
2	Secondary	25	1,800	7.99	144	28,500	2,276	91
41	Elementary	38	1,760	20.15	355	32,327	6,514	171
Average cost per teacher for clinical supervision								\$117

teacher evaluation in Table 4 with the percentage computed in Table 5 demonstrated a correlation coefficient of $r = .22$, which was non-significant with 21 degrees of freedom. As a result, it was concluded that there was no relationship between estimates of time spent in teacher evaluation and actual time spent as computed through individual estimations of the separate components of the formal evaluation process.

CHAPTER V.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of the present investigation was to create and test a model for delineating administration costs in general administration, supervision, and teacher evaluation. Three general steps allowed this purpose to be accomplished. First, budget data from the SIM school organizations were organized and analyzed using codes contained in handbooks for financial accounting from Minnesota, Iowa, and the National Association of Independent Schools (40, 56, 59). Next, categorical monies needed to disaggregate direct and indirect costs for administration were identified. Categorical funding was removed from general fund budget totals in an attempt to provide comparable budget information across all SIM school organizations. Resultant budget totals were identified as the Instructional General Fund Budget (IGFB) for each of the 21 buildings included in the sample. A symbolic representation of the formula used to arrive at IGFB totals follows:

$$\text{Total budget} - \text{Categorical funding} = \\ \text{Instructional General Fund Budget (IGFB).}$$

Third, formulas which were appropriate to various local school sizes and settings were created for extracting general administration, supervision, and teacher evaluation costs as a percentage of administrative time.

Model formulas were applied to the general fund budgets of the five school organizations of SIM. Data were analyzed for costs of general administration, supervision, and teacher evaluation by size,

type, and level of school building. In addition, costs of teacher performance evaluation, clinical supervision, and a teacher evaluation/teacher advisor method of teacher evaluation were analyzed. Basic formula configurations utilized in the present investigation were organized as follows, where:

T_e = number of teachers to evaluate

T_t = evaluation time in hours per teacher (the sum of minutes per teacher in evaluation activities as listed in the appendix divided by 60), and

T_a = total administrator/teacher advisor hours spent in teacher evaluation, then

$T_a = T_e \times T_t$

where:

$T\%$ = percent of administrator or teacher advisor time in evaluation, and

S_d = contract days per administrator or teacher advisor, then

$T\% = T_a / S_d \times 8$ hours per day

where:

C_b = Cost per building for teacher evaluation, and

$S\$\$$ = Contract salary per administrator or teacher advisor, then

$C_b = S\$\$ \times T\%$

where:

C_t = Cost per teacher for teacher evaluation, then

$C_t = C_b / T_e$

where:

$IB\%$ = Percent of IB spent on teacher evaluation, then

$IB\% = C_b / IB.$

Precisely the same logic was utilized in computing the costs of general administration and supervision, with one notable difference: the recalculated percentage estimates of time committed to these administrative functions (found in Table 5) were applied to salary and IB data by school building and school organization. The net effect of such calculations was to divide the salaries and contract hours of the SIM administrators over three administrative functions: general administration, supervision, and teacher evaluation.

As expected, the largest costs among the SIM school organizations were those for general administration. Supervision was the next largest expenditure of administrative time (and hence, money). The least amount of money was spent on teacher evaluation; only .18 percent of the total IB for the SIM school organizations.

Although costs varied by school building and school organization in SIM, the questions posed in the present study were answered. Costs of clinical supervision and teacher performance evaluation were accurately defined, as were those for Northfield's teacher evaluation/teacher advisor method. General administration costs for the K-12 and independent school organizations of SIM were defined and extracted from general fund budgets. Supervision costs were defined and codified from general fund budgets, and teacher evaluation costs were defined for the SIM school organizations. Each of the above administrative activities was analyzed in person/hours per teacher, and in dollar costs per teacher.

Conclusions

When considering the following conclusions, keep in mind that the numbers in this research accurately describe costs within the SIM schools, but are only illustrative of how the model works. They may not be generalized to a larger target population. The numbers are not really that important; the model is the product.

1. The model formulas for the present study were successful. Costs for general administration, supervision, and teacher evaluation were accurately defined.
2. Building administrative costs across SIM were only slightly more than 4 percent (4.03%) of the General Fund Instructional Budget (IB) for the 21 buildings included in the sample. Average percentages of the IB spent for administrative salaries by SIM school organization were: Breck, 4.26 percent; Edina, 3.01 percent; Minneapolis, 3.82 percent; Northfield, 4.73 percent; and Spirit Lake, 5.85 percent. It appears from these data that administration in general is a relatively inexpensive budget item among the SIM school organizations.
3. General administration among the SIM school organizations cost 2.06 percent of the total IB. Breck's costs were 3.23 percent of its IB; Edina, 2.29 percent; Minneapolis, 1.62 percent; Northfield, 2.75 percent; and Spirit Lake, 3.01 percent. It costs significantly more (\$799 to \$486) per teacher for general administration in SIM buildings with

fewer than 35 teachers than it costs in buildings with 35 or more teachers. By comparison, descriptive data on non-public buildings showed a cost of \$869 per teacher, whereas public school building costs amounted to \$557 per teacher.

Elementary buildings averaged a general administration cost of \$609 per teacher and secondary buildings \$540 per teacher, which was not statistically significant.

4. Supervision among the SIM school organizations cost 1.79 percent of the total IB. Resultant costs by individual school organization were .74 percent for Breck, 1.36 percent for Edina, 2.12 percent for Minneapolis, 1.69 percent for Northfield, and 2.72 percent for Spirit Lake. A pattern quite similar to general administration costs emerged when supervision costs by size, type, and level of building were analysed. Although not statistically significant, costs of supervision for buildings with fewer than 35 teachers (\$644 per teacher) were higher than those in buildings with 35 or more teachers (\$443 per teacher). The descriptive analysis of non-public versus public school buildings showed the reverse of costs for general administration, with non-public building costs per teacher being lower (\$199 to \$526) than those per public school teacher. Elementary supervision costs were higher than secondary (\$572 per teacher as compared to \$412), although the differences were not statistically significant.

5. It is not costly to evaluate teachers, even in school organizations such as those which comprise SIM, where special emphasis has been placed on the importance of teacher evaluation. Even when the costs of SIM project services were added, only .40 percent of the total IB was committed to teacher evaluation. Breck's costs were .70 percent of its IB; Edina, .34 percent; Minneapolis, .29 percent; Northfield, .60 percent; and Spirit Lake, 1.08 percent.
6. Teacher performance evaluation was the most economical of the three methods of teacher evaluation employed by the SIM school organizations, when average administrative salaries among the 21 buildings were utilized in the cost analysis formulas. The average cost was \$143 per teacher evaluated via teacher performance evaluation, whereas clinical supervision costs were \$154 per teacher, and the teacher evaluation/teacher advisor method \$306 per teacher.
7. Teacher evaluation does not take a great deal of administrators' time. Of the 23 evaluators comprising the sample for the present investigation, a maximum commitment of time of 20.15 percent and a minimum of .60 percent was demonstrated. Overall, SIM administrators and teacher advisors spent only 4.5 percent of their time in the teacher evaluation process.

Discussion

It was not surprising to the present researcher that such a small amount of the SIM school organizations' IB was spent on administration.

By contrast with private industry, school organizations are under-managed. The span of control which the typical principal or division head is expected to assume is unheard of in virtually any other business or agency. Notwithstanding the small expense for administration, the administrators and teacher advisors who comprised the sample for the present study spent an almost negligible amount of time in the teacher evaluation process. It seems reasonable to assume that no substantial change in overall administrative staffing patterns will occur in most school organizations; therefore, it is incumbent upon those who set policy for schools to require a larger commitment of existing time to the vital function of teacher evaluation.

The challenge for education and our national interest is to determine the real importance of excellence in education. Recent research has repeatedly highlighted and identified the critical role building administrators and division heads play in student achievement, school climate, and morale (10, 26, 74, 86, 91). In addition, those same administrators are charged with the responsibility of orchestrating the interactions of teachers and students with the curriculum of the schools.

The results of the present investigation indicate that very little is invested in time and budget dollars to assure competent and improvement-oriented evaluation of teachers. One would suspect that the principals, division heads, and teacher advisors of SIM were, if anything, more involved with teacher evaluation than the typical

administrator, since a major component of SIM was evaluation of teachers for the improvement of instruction (48).

Kerr's research (41), which is the research most parallel to the present study, described costs for evaluation of tenured and non-tenured teachers in Colorado Springs, Colorado. Those costs were determined to be \$658.51 per non-tenured teacher, and \$524.64 for tenured teachers. Even though costs of evaluation as reported by Kerr were considerably higher than those of SIM as analyzed in the present investigation, those costs were still small in comparison to the possible payoffs: more effective evaluation of teacher performance, greater student achievement, and a generally more professional atmosphere in the schools.

Limitations

1. Model formulas for the present study were applied to a relatively small sample size (N = 23, with 21 principals and division heads and two teacher advisors).
2. Budget figures utilized were from published documents, but did not represent actual expenditures. It is possible that some of the cost analyses would be different if actual expenditures were available.
3. Time analysis data gathered on administrators and teacher advisors were estimates from the subjects themselves.
4. Teacher time (and the associated costs) in the evaluation process was not included in the formulas.

Recommendations for Further Research

1. The model formulas should be applied to samples with larger numbers, so that all of the hypotheses could be statistically analyzed.
2. Time data for administrators should be gathered more scientifically, even though the estimates provided for the present investigation should have been reasonable. Administrators and teacher advisors in the sample had been trained through SIM to log their time and to analyze how their working hours were utilized.
3. A study of the impact of teacher time in the evaluation process, in conjunction with application of the model formulas of the present study, would present an even more accurate picture of the costs of teacher evaluation.
4. The present study dealt with quantities; evaluation hours spent and dollars spent per teacher. Quality of that time and monetary investment was not assessed. Perhaps the concepts of Arrendondo's study (5), which related to administrative emphasis on staff evaluation as a component of secondary school effectiveness, and those of the present study could be combined to ascertain qualitative factors in the teacher evaluation process.

Recommendations for Practice

1. Administrators will find that combining the methodologies of the present investigation with those of a companion

investigation (Lane, 43) will approach the most sophisticated benefit-cost analysis available today. Lane's study (43) presented formulas for costing out reading and mathematics instruction in the SIM school organizations.

2. The power and flexibility of the microcomputer were well demonstrated in the present study. The model formulas and mathematical analyses contained are readily available for local application, with the utilization of existing hardware and software.
3. In light of the minimal amount of time the typical administrator commits to teacher evaluation, superintendents and headmasters should create strategies for increasing time spent by principals and division heads. A place to begin would be the logging of actual time spent on teacher evaluation activities and, subsequently, requiring that this amount be as high as 10 percent!

The models developed in the present investigation provide a partial answer to the questions of how much time and how much cost is associated with teacher evaluation. It is neither too costly, nor too time-consuming. In fact, the results of the present study demonstrate that a careful analysis of administrative time utilization in a local setting could provide greatly increased supervision of teachers without a substantial reorganization of the typical elementary or secondary school building. Increased commitments to the teacher evaluation process, by refocusing administrators' energies, could have dramatic

positive effects on individual schools, as well as on entire school organizations.

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APPENDIX

9. Given the following categories and definitions, estimate the percent of your time spent on each of the following. (These percents should add up to 100%.)

_____ % General Administration - paperwork, telephone, staff meetings, parent conferences, central office or division meetings.

_____ % Supervision - assigned regular duties, discipline, time "in the building."

_____ % Teacher Evaluation - classroom observations, pre- and post-observation conferences with teachers, completing forms, reviewing materials and data for Teacher Performance Evaluation (TPE).

10. In your school, how many minutes per student per week is allotted for instruction in:

_____ Math

_____ Reading (elementary administrators only)

11. How many minutes per day:

_____ are teachers required to be in school?

_____ are students required to be in school?

_____ is the typical student not in class (recess, lunch, passing time, etc.)?

_____ is the typical teacher not in direct contact with students (lunch, prep period, etc.)?

* * * * *

ONLY MINNEAPOLIS PUBLIC SCHOOL'S ADMINISTRATORS ANSWER QUESTION 12.

12. If you were an administrator for Minneapolis Public Schools last year (1981-1982), what type of program did you administer?

_____ Was not an administrator for Minneapolis Public Schools last year

_____ Comprehensive

_____ Contemporary

_____ Continuous Progress

_____ Fundamentals

_____ Montessori

_____ Open

_____ Other (Specify) _____