A UNIT COST ANALYSIS OF THE EDUCATIONAL EXPENDITURES OF A SELECTED SCHOOL DISTRICT IN NEWFOUNDLAND AND LABRADOR 1970 - 1971

CLUNEY WYCLIFFE GEORGE VINCENT

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

A UNIT COST ANALYSIS OF THE EDUCATIONAL EXPENDITURES OF A SELECTED SCHOOL DISTRICT IN NEWFOUNDLAND AND LABRADOR 1970-1971

by

CLUNEY WYCLIFFE GEORGE VINCENT

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

ST. JOHN'S, NFLD.

FALL, 1974

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Unit Cost Analysis of the Educational Expenditures of a Selected School District in Newfoundland and Labrador 1970-1971," submitted by Cluney Wycliffe George Vincent in partial fulfilment of the requirements for the degree of Master of Education.

.....
Supervisor

.....

.....

Date.....

ACKNOWLEDGEMENTS

This thesis was completed with the assistance and support of the Department of Educational Administration of the Memorial University of Newfoundland. The writer wishes to express his thanks to the members of his advisory committee, and particularly to his advisor, Dr. K.W. Wallace.

Thanks are also expressed to the numerous persons of the administrative staff of the school district studied, without whose help this thesis could not have been completed.

Throughout the writing of this thesis, a very personal and particular assistance was afforded the writer by his wife, Fern; daughter, Lisa; and son, Craig. To these various individuals, the writer offers sincere gratitude.

ABSTRACT

The purpose of this study was to conduct an analysis of the financial operations of a selected school district in the province of Newfoundland and Labrador for the school year 1970-1971.

Three phases comprised the design of the study: (1) anticipatory preparation, (2) procedural methodology, and (3) findings and analysis. More explicitly, anticipatory preparation involved the development of uniform terminology, the establishment of a performance-based expenditure classification system, and the determination of the accounting basis. The procedural methodology or unit costing entailed the determination of the following, before the chosen per pupil costs of specified areas could be estimated: (1) the period of time, (2) the appropriate pupil unit, (3) the areas to be included, (4) the proration basis, and (5) the actual or accrued costs. Findings and analysis involved: (1) the extrapolation of the major findings, and (2) the analysis of the findings and cost data to make comparisons, predict trends, and draw inferences.

Data were obtained from the financial ledgers of the school district and from primary sources. The Faculty Workload Survey questionnaire provided data regarding the teaching staff in the district. Initial treatment of the data included prorating the costs to schools, and where possible, to subjects and program routes. Final treatment of the data involved the calculation of cost figures; namely, (1) the total operational costs in the district, (2) the cost per pupil in the district, (3) the cost per pupil in each school, (4) the cost per pupil in each subject, (5) the cost per pupil in each subject cluster, and

(6) the cost per pupil in each grade level or program route.

The total educational operational expenditures in the school district amounted to $1,763,164.28 which averaged an estimated per pupil cost of $327.48. Direct instructional salaries accounted for 58.4 per cent of this amount.

It was found that there were significant differences among costs per Divisions, resulting primarily from differences in direct instructional costs. In Divisions I, II, and III the most expensive subject cluster was Language Arts, while in Division IV the most expensive subject cluster was Mathematics. The cost per pupil per Division increased steadily from Division I through to Division IV inclusive. In Division IV it was found that the cost of the General Diploma route was significantly more expensive than the Academic Matriculation route.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	STATEMENT OF THE PROBLEM AND ITS SIGNIFICANCE	1
	Introduction	1
	Statement of the Problem	2
	The Main Problem	2
	The Sub-Problems	2
	Definition of Terms	2
	Delineation of the Study	5
	Limitations	5
	Delimitations	5
	Assumptions	6
	The Need for the Study	7
	Summary	7
II.	REVIEW OF THE RELATED LITERATURE	9
	Introduction	9
	Cost Analysis	9
	Definition of Cost Analysis	9
	Significance of Cost Analysis as a Whole	10
	Optimal Quality, Benefit and Opportunity	11
	Adequacy of Educational Program	12
	Adequacy of Revenues and Expenditures	13
	Meaningful Expenditure Data	13
	School Business Management	14
	Public Support for Education	14
	Preparation of the School Budget	14

TABLE OF CONTENTS (continued)

CHAPTER		PAGE
	Accounting Systems	15
	Conventional Accounting Systems	15
	Program Accounting Systems	16
	Cost Analysis and PPBS	17
	Cost Analysis Studies in Education	18
	Summary	19
III.	THE RESEARCH DESIGN	21
	Introduction	21
	Stages in Unit Cost Analysis	21
	Anticipatory Preparation	23
	Uniform Terminology	23
	Bases of Accounting: Cash or Accrual	23
	Expenditure Classification	23
	Location and Performance Classifications	24
	Expenditure Classification Items	28
	Unit Costing (Procedural Methodology)	30
	Period of Time for Per Pupil Expenditures	31
	Appropriate Pupil Unit	31
	Proration Basis for Each Expenditure Series	31
	Estimation of Actual Costs	34
	Estimation of Chosen Per Pupil Costs	34
	Findings and Analysis	35
	Summary	35

TABLE OF CONTENTS (continued)

CHAPTER		PAGE
IV.	DATA SOURCES, COLLECTION, AND TREATMENT	36
	Introduction	36
	Data Sources and Collection	36
	Treatment of Data	37
	Administration	37
	Instruction	37
	Pupil Transportation Services	38
	Plant Operation	38
	Plant Maintenance	39
	Fixed Charges	39
	Summary	39
V.	PER PUPIL COSTS	40
	Introduction	40
	Estimated District Total Costs and Per Pupil Costs	40
	Estimated Total Costs and Per Pupil Costs by School	42
	Direct Instructional Per Pupil Costs Per Subject by Grade Division	57
	Division I	66
	Division II	66
	Division III	67
	Division IV	68
	Direct Instructional Per Pupil Costs Per Subject Cluster by Grade Division	69

TABLE OF CONTENTS (continued)

CHAPTER		PAGE
V.	Division I	70
	Division II	70
	Division III	73
	Division IV	73
	Per Pupil Costs by Various Programs	76
	Division I	76
	Division II	82
	Division III	82
	Division IV	82
	Summary	96
VI.	SUMMARY, FINDINGS AND CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH	98
	Introduction	98
	Summary	98
	Findings and Conclusions	99
	District Costs	99
	Total Costs by School	99
	Costs Per Pupil by School	100
	Per Pupil Costs Per Subject by Grade Division	100
	Per Pupil Costs Per Subject Cluster	101
	Per Pupil Costs Per Program Route	102
	Implications and Recommendations	103
	Suggestions for Further Research	104

TABLE OF CONTENTS (continued)

CHAPTER		PAGE
BIBLIOGRAPHY		106
APPENDIX A.	Classification of Subjects Used to Determine Per Pupil Instructional Costs	112
APPENDIX B.	Direct Instructional Costs by Subject	117
APPENDIX C.	Indirect and Implementary Costs Information	147
APPENDIX D.	District Enrolment, and School Faculties and Other Information	149
APPENDIX E.	Faculty Workload Survey Questionnaire	153

LIST OF TABLES

TABLE		PAGE
I.	Proration Methods Utilized in Allocating Expenditures to Schools, Grades, and Subjects	32
II.	Estimated Average Per Pupil Costs in the School District by Aggregate Expenditure Series: 1970-1971	41
III.	Estimated Average Per Pupil Costs by Specified Expenditure Classification in the School District: 1970-1971	43
IV.	Estimated Total Operations Costs Allocated Per Expenditure Classification by School in the School District: 1970-1971	44
V.	Estimated Average Per Pupil Costs Per Expenditure Classification by School in the School District: 1970-1971	50
VI.	Estimated Per Pupil Costs Per Subject for Division I in the School District: 1970-1971	59
VII.	Estimated Per Pupil Costs Per Subject for Division II in the School District: 1970-1971	61
VIII.	Estimated Per Pupil Costs Per Subject for Division III in the School District: 1970-1971	64
IX.	Estimated Per Pupil Costs Per Subject for Division IV in the School District: 1970-1971	67
X.	Estimated Direct Instructional Per Pupil Costs by Subject Cluster for Division I in the School District: 1970-1971	71

LIST OF TABLES (continued)

TABLE		PAGE
XI.	Estimated Direct Instructional Per Pupil Costs by Subject Cluster for Division II in the School District: 1970-1971	72
XII.	Estimated Direct Instructional Per Pupil Costs by Subject Cluster for Division III in the School District: 1970-1971	74
XIII.	Estimated Direct Instructional Per Pupil Costs by Subject Cluster for Division IV in the School District: 1970-1971	75
XIV.	Estimated Subject Cluster Costs for Divisions I, II, III, and IV in the School District: 1970-1971	77
XV.	Estimated Per Pupil Costs by Subject Cluster for Kindergarten in the School District: 1970-1971	79
XVI.	Estimated Per Pupil Costs by Subject Cluster for Grade One in the School District: 1970-1971	80
XVII.	Estimated Per Pupil Costs by Subject Clsuter for Grade Two in the School District: 1970-1971	81
XVIII.	Estimated Per Pupil Costs by Subject Cluster for Grade Three in the School District: 1970-1971	83
XIX.	Estimated Per Pupil Costs by Subject Cluster for Grade Four in the School District: 1970-1971	84
XX.	Estimated Per Pupil Costs by Subject Cluster for Grade Five in the School District: 1970-1971	85

LIST OF TABLES (continued)

TABLE		PAGE
XXI.	Estimated Per Pupil Costs by Subject Cluster for Grade Six in the School District: 1970-1971	86
XXII.	Estimated Per Pupil Costs by Subject Cluster for Grade Seven in the School District: 1970-1971	87
XXIII.	Estimated Per Pupil Costs by Subject Cluster for Grade Eight in the School District: 1970-1971	88
XXIV.	Minimum-Maximum Estimated Grade Nine General Program Per Pupil Costs in the School District: 1970-1971 . . .	89
XXV.	Minimum-Maximum Estimated Grade Nine Academic Program Per Pupil Costs in the School District: 1970-1971 . . .	90
XXVI.	Minimum-Maximum Estimated Grade Ten General Program Per Pupil Costs in the School District: 1970-1971 . . .	91
XXVII.	Minimum-Maximum Estimated Grade Ten Academic Program Per Pupil Costs in the School District: 1970-1971 . . .	92
XXVIII.	Minimum-Maximum Estimated Grade Eleven General Program Per Pupil Costs in the School District: 1970-1971 . . .	93
XXIX.	Minimum-Maximum Estimated Grade Eleven Academic Program Per Pupil Costs in the School District: 1970-1971 . . .	94
XXX.	Minimum-Maximum Estimated Per Pupil Costs of the General and Academic Programs in Division IV in the School District: 1970-1971	95
XXXI.	Estimated Per Pupil Costs of Direct Instruction in Division I in Each of the Schools Where Division I Subjects Were Taught in the School District: 1970-1971	118

LIST OF TABLES (continued)

TABLE		PAGE
XXXII.	Estimated Per Pupil Costs of Direct Instruction in Division II in Each of the Schools Where Division II Subjects Were Taught in the School District: 1970-1971	124
XXXIII.	Estimated Per Pupil Costs of Direct Instruction in Division III in Each of the Schools Where Division III Subjects Were Taught in the School District: 1970-1971	130
XXXIV.	Estimated Per Pupil Costs of Direct Instruction in Division IV in Each of the Schools Where Division IV Subjects Were Taught in the School District: 1970-1971	138
XXXV.	Estimated Costs Per Pupil of Indirect and Implementary Expenditures Per Grade in the School District: 1970-1971	148
XXXVI.	Breakdown of District Enrolment by Grade and Grade Division	150
XXXVII.	Qualifications, Experience, and Average Salary of School Faculties	151
XXXVIII.	Grades Taught, Total Enrolments, and Number of Registered Rooms by School	152

LIST OF FIGURES

FIGURE PAGE

1. Classification of Expenditures 25
2. Function-Object Classification of Educational Expenditures 26
3. Grade Level Classification by Division 27
4. Classification of Subjects by Subject Cluster for Division I 113
5. Classification of Subjects by Subject Cluster for Division II 114
6. Classification of Subjects by Subject Cluster for Division III 115
7. Classification of Subjects by Subject Cluster for Division IV 116

CHAPTER I

STATEMENT OF THE PROBLEM AND ITS SIGNIFICANCE

I. INTRODUCTION

A very dramatic trend in education is the rapid growth in public spending for education. Brown states that between 1947 and 1967 the national educational effort in Canada increased nearly threefold from 2.7 to an estimated 7.9 per cent of the Gross National Product.[1] Even though there has been an increasing acceptance of the vital relationship between the availability of adequate finances and the character of the educational program, it now appears that the public does not so readily accept the view that more and more money will ensure 'quality' education.[2] Apparently the increases in educational expenditures have resulted in increased interest and surveillance by the public.

Rising educational costs and increased taxpayer interest suggest the need for two things; namely, that educational finances be astutely invested; and that the expenditures for education be summarized, analyzed, and meaningfully reported to the members of the educational system and the public. Unit cost analysis is an approach which can help meet these needs.

---

[1] Wilfred J. Brown. Education Finance in Canada. (Ottawa: Canadian Teachers' Federation, 1969), p. 81.

[2] P.J. Warren. "Trends in Financing Education With Selected Implications," An Address to the Altantic Conference of Teachers, St. John's, June, 1970, p. 4; see also Phi Delta Kappan, LII (December, 1970).

II. STATEMENT OF THE PROBLEM

The Main Problem

The major problem of this study was to conduct a unit cost analysis of the educational expenditures of a selected school district[1] in the province of Newfoundland and Labrador for the school year 1970-1971.

The Sub-Problems

Several sub-problems were investigated in this study:

1. What were the total operational costs of the district?
2. What were the costs per pupil in the district?
3. What were the costs per pupil in each school?
4. What were the instructional costs per pupil in each subject by grade division?
5. What were the instructional costs per pupil in each subject cluster by grade division?
6. What were the costs per pupil of various curricular program routes? The programs considered in Division IV were the General Diploma route and the Academic Matriculation route. Program routes in Divisions I, II, and III were considered by grade levels.

III. DEFINITION OF TERMS

This section does not include all the terms that are defined in

---

[1]The identity of the school district is kept anonymous at the request of the school district personnel. However, its identity may be made known to interested groups or individuals upon request.

this study since a number of terms have been defined in more appropriate sections throughout the study. Key working definitions pertinent to the problems investigated in this study appear in this section.

Accrued Expenditures

These are expenditures which have been incurred but not paid as of a given date.

Average

This term is used synonymously with 'mean'.

Costs and Expenditures

These terms are used interchangeably to mean the sacrifice made in monetary terms, whether paid or unpaid, for any good or service during a process.

Cost Analysis, Unit Cost Analysis, and Cost Accounting

These terms refer to the determination of educational expenditures for specific functions, activities, services or performances; the conversion of the expenditures into per pupil unit costs; and the analysis of the per pupil unit costs which result.

Educational Costs

These are the operating expenditures which were examined within the limits of this study. That is, the expenditures of the school district, excluding debt charges, interest, depreciation, and capital outlay.

Expenses

These are expenditures incurred, for non-salary items, by employees, for example, travel expenses, supplies, et cetera.

Function-Object Classification

This is the categorization of educational costs by grouping the items of expenditure (objects) associated with a type of activity (function) that has a broad common purpose, for example, plant operation. (see Figures 1 and 2, pages 25-26).

Grade Division

This term refers to the twelve grades, kindergarten to eleven inclusive, divided into four equal sections; for example, Division I is comprised of the grades kindergarten, one, and two. (see page 27).

Prorating

The allocation of parts of a single expenditure to two or more different accounts in proportion to the benefits which the expenditure provides for the purpose or program area for which the accounts were established.

Pupil and Enrolled Pupil

These terms are used interchangeably to refer to a person enrolled or registered in a subject or course for the duration of that subject or course.

Salary

The total amount paid or stipulated to be paid to an employee, before deductions, for personal services rendered while on the payroll of the school board.

School Year

The period from September 1, 1970 to August 31, 1971.

Subject Cluster

A group of subjects with a common feature. Subject clusters used in this study are presented in Figures 4 to 7, pages 113 to 116.

Unit Cost

A quotient derived from expenditures made during the performance of a task. The expenditure data which are to be reduced to unit terms comprise the dividend, and a measure of the size of the task performed comprises the divisor.

IV. DELINEATION OF THE STUDY

Limitations

This study was limited by the following:

1. The operating expenditures, according to well established cost analysis procedures, were defined so as not to include debt charges, interest, depreciation, and capital outlay.
2. Only regular day students were included, that is, the study did not include adult classes, or other community services provided by the school district.
3. Most of the proration ratios were established by primary source.

Delimitations

1. The study was delimited to the expenditures of the selected school district for the school year 1970-1971.
2. The analysis of the designated expenditures was delimited to those schools within the selected school district.

V. ASSUMPTIONS

The execution of a unit cost analysis study is contingent on many guiding assumptions. The following assumptions were made with respect to this study:

1. The records from which the necessary financial data and related information were taken were accurate and complete.
2. Any expenditure category resulting in a district per pupil cost of less than twenty-five cents ($0.25) was insignificant for the purpose of determining per pupil costs.
3. The various functional-character-object unit costs of education per pupil were comparable among the schools included in this study.
4. The basis chosen for prorating expenditures were equitable, adequate, and realistic.
5. As estimated by the primary sources where personal services were concerned, the proportion of time spent in any activity was an accurate reflection of the expenditures devoted to that activity.
6. Since it is not the purpose of this study to arrive at conclusions about the quality of either the inputs or outputs of the educational process at the elementary and secondary school levels, it was assumed that any differences in per pupil unit costs reflect differences in costs rather than differences in quality. That is, higher unit costs in one school do not necessarily mean or imply that the quality of education is better in that school.

VI. THE NEED FOR THE STUDY

As has already been stated, unit cost analysis is an approach to summarize, analyze, and report the educational expenditures to members of the school system as well as to the general public. In addition, unit cost analysis is a means of providing decision-makers with insights into budgeting and spending.

Palethrope opines that unit cost analysis is important for at least two reasons:[1]

1. It provides decision-makers within the school district with detailed cost data which can be advantageous when establishing priorities and allocating funds, and
2. It provides the provincial Department of Education with educational cost data which may be useful when guidelines are being established for the allocation of provincial funds for public education.

The major justification for this study lies in the fact that the unit costs of operation for the schools studied have been revealed, that these unit costs have been determined by the use of one technique, and therefore, the making of comparisons of these unit costs was facilitated.

VII. SUMMARY

The ever-increasing costs of public education have resulted in increased public attention and concern. Thus there is a growing need

---

[1]Donald Sydney Palethrope. "Unit Cost Analysis of the Educational Expenditures of the County of Grande Prairie 1969-1970," Unpublished Master's Thesis, University of Alberta, Edmonton, 1970, p. 10.

for school administrators to plan and spend wisely and to report these educational expenditures in a meaningful way both to educators and the public in general. Cost accounting and unit cost analysis can be used to this end.

The main problem of this study was to conduct a unit cost analysis of the educational expenditures of the selected school district in the province of Newfoundland and Labrador for the 1970-1971 school year.

The sub-problems investigated dealt with the computation of per pupil educational costs (1) in the district, (2) in each school, (3) in each subject by grade division, (4) in each subject cluster, and (5) in various curricular program routes.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

I. INTRODUCTION

The purpose of this chapter is to review the literature pertinent to the design of this study. Some specific aspects of cost analysis are reviewed so as to relate cost analysis to program accounting and budgeting. The underlying assumption is that cost analysis provides decision-makers with data that can improve the decision making process.

In particular, this chapter defines cost analysis, outlines the significance of cost analysis as a whole, relates accounting systems to cost analysis and, indirectly, to planning-programming-budgeting systems, and briefly cites examples of the application of cost analysis studies to education.

II. COST ANALYSIS

Definition of Cost Analysis

Unit cost analysis or unit cost accounting is a process which "...attempts to measure the amount of expenditures for programs, performances, activities or outputs based on a standard measurable unit."[1] The generated per unit costs (per pupil unit costs in this study), after being analyzed in terms of the conditions and variables, objectives,

---

[1] John Lyon Myroon. "Unit Cost Analysis of the Educational Expenditures of the County of Thorhild 1967-1968." Unpublished Master's Thesis, University of Alberta, Edmonton, 1969, p. 3.

and outputs of the school district, can then be utilized as a basis for evaluation and subsequent improvement of the educational process in the school district.

A clearer definition of unit cost analysis is given by Fowlkes and Hansen:[1]

> Cost analysis is the process of studying the total cost of public education for a given community, state, or area for a given year; trends in total school costs; the costs of specific services or subjects, e.g. transportation or English; the cost of education by grades or levels, e.g. elementary school costs, secondary school costs; cost of maintenance; cost and tax paying ability; cost and size of school; reasons for increased costs; reasons for decreased costs; need for increased costs, and need for decrease in costs.

As is defined in Chapter I, for the purpose of this study, unit cost analysis refers to the determination of educational expenditures for specific functions, activities, services or performances; the conversion of these expenditures into per pupil unit costs; and the examination and analysis of the per pupil unit costs which result.

III. SIGNIFICANCE OF COST ANALYSIS AS A WHOLE

Unit cost analysis studies are significant to the school district being studied, in that they are a means to the acquisition of useful data which can assist the school district in the following ways;[2]

---

[1] G.J. Fowlkes and A.L. Hansen. "Business Management-Accounting, Auditing and Reporting," Problems and Issues in Public School Finance. Edited by R.L. Johns and E.L. Morphet. (New York: National Conference of Professors of Educational Administration, 1952), p. 471.

[2] See Palethrope, op. cit., pp. 5-6; and Myroon, op. cit., pp. 7-8.

1. achieving an operating efficiency which results in optimal quality, benefit, and opportunity being obtained from limited resources,
2. establishing and maintaining an adequate and sufficient educational program,
3. determining the adequacy or inadequacy of school revenues and expenditures,
4. meaningfully informing concerned persons about educational expenditures,
5. evaluating the competence of school business management,
6. establishing an appreciation in the public sector for supporting education, and
7. preparing the school budget.

Optimal Quality, Benefit and Opportunity

Cost analysis can be of great value to everyone concerned with education, especially decision-makers who require cost data to improve their judgement in allocating scarce resources. The importance of the monetary aspect of decision-making is noted by Chamberlain:[1]

> Each decision tends to involve a budgetary provision... Under the limits of scarcity, all desired decisions cannot be made, all valid and valuable objectives cannot be pursued.

As the funds and resources for education are scarce, it is becoming increasingly more important that the educational expenditures

---

[1]Gordon Lorin Chamberlain. "A Program Budget for Education." Unpublished Doctoral Thesis, Stanford University, 1967, p. 6.

result in the greatest possible return. Fowlkes and Hansen maintain that optimal returns for the investment in education can result from cost analysis:[1]

> Maximum educational opportunity within limits of financial ability and a reasonable guarantee of operating efficiency that obtains, as nearly as possible, maximum value per dollar spent for public education might well be adopted as a working charter for all those responsible for business management of public education. Such a charter can be maintained only if... cost analysis of the type suggested can be made.

Therefore, unit cost analysis can provide significant information which could be of assistance in the investment of limited educational resources so as to achieve an operating efficiency with optimal quality and benefit from the educational program.

Adequacy of Educational Program

Cost analysis data can not only provide information for school administrators to make better fiscal decisions, but also can provide educational personnel with information which can aid in making program and other curricula changes. In an environment of change and innovation, cost analysis data can be utilized in the development and maintenance of an adequate educational program. Mort, Reusser, and Polley state: "The cost of the various elements in the school program is a necessary item in case changes in the program are contemplated."[2]

Further, Knezevich opines that unit cost analysis data assist the administration of an educational program as well as the administration

---

[1]Fowlkes and Hansen, op. cit., p. 472.

[2]P.R. Mort, W.C. Reusser, and J.W. Polley. Public School Finance: Its Background, Structure, and Operation. (New York: McGraw-Hill Book Company, Inc., 1960), p. 401.

of the school district as a whole, when he stresses: "The fundamental purpose of unit cost analysis is to present and interpret cost data as an aid to administration of public education."[1]

Adequacy of Revenues and Expenditures

The unit cost data provided by a cost analysis study can assist in assessing the adequacy of the expenditures for each element in the school program; in fact, the knowledge of the cost of an element in the school program is a determinant of policy regarding that element.[2] For example, if a particular subject is not considered highly relevant, but is found to have a high per pupil cost, then an assessment can be made of the adequacy or inadequacy of the expenditures on that particular subject, and policy regarding that subject can be changed if necessary.

Meaningful Expenditure Data

A balance sheet or an auditor's statement does not necessarily say everything one might wish to say about the expenditures for education for a particular time and place. Cost analysis figures, being much more explicit, provide a much more meaningful and accurate picture of pupil costs per subject, program, grade, school, and district, which can be used as a basis for evaluating the program and which can be used to give an understanding of educational costs to those whom it might concern.

---

[1] S.J. Knezevich. "Resource Management and Educational Logistics," The Theory and Practice of School Finance. Edited by W.E. Gauerke and J.R. Childress. (Chicago: Rand McNally and Company, 1967), p. 204.

[2] Mort, Reusser, and Polley, op. cit., p. 400.

School Business Management

The competence of school business management can be evaluated by means of cost analysis data.[1] Since cost analysis figures provide for comparisons of subjects, grade levels, schools, et cetera, the more efficient and/or more resourceful planning of educational expenditures can be determined.

Public Support for Education

Cost analysis figures, in that they provide meaningful expenditure data, can assist in determing the adequacy of revenues and expenditures, can assist in the establishment and maintenance of an educational program, can assist in more efficient investment of educational funds, and can assist in evaluating the competency of school business management, and thus indirectly can assist in the establishment of an awareness and appreciation by the school personnel, administrators, school board, and the public, of the necessity of providing adequate school revenues.

Preparation of the School Budget

The importance of unit cost analysis in the preparation of the school budget is suggested by Ovsiew and Castetter: "...detailed and accurate cost accounts can reduce the time and labor needed in budget preparation by 90 per cent."[2] Instead of merely providing for

---

[1] Fowlkes and Hansen, op. cit., p. 471.

[2] C. Ovsiew, and W.B. Castetter. Budgeting for Better Schools. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1960), p. 287.

percentage increases or decreases over a previous year's budget, cost analysis can provide information which permits specific monetary allocations to particular elements in the program.

IV. ACCOUNTING SYSTEMS

A charter, as suggested by Fowlkes and Hansen, for providing for quality education, optimal investment of educational funds, and equality of educational opportunity, "can only be maintained if financial accounting systems for schools are such that cost analysis... can be made."[1] That is, any attempt to study expenditures for education must refer to the system of accounting of the raw data. As Knezevich and Fowlkes state, "It would be extremely difficult, if not impossible, to have a meaningful unit cost analysis without designing an accounting system to satisfy such purposes."[2]

Conventional Accounting Systems

Financial accounting in a school system is, in general, aimed at helping carry out the purposes of the school. Four specific functions of accounting in a school system are listed by Rosenstengel and Eastmond.[3]

> ...the functions are (1) helping to develop the educational program, (2) meeting the legal requirements as to expenditures of funds, (3) giving data for cost studies, and (4) furnishing the necessary information for budget building and reporting.

---

[1] Fowlkes and Hansen, op. cit., p. 472.

[2] S.J. Knezevich, and J.G. Fowlkes. Business Management of Local School Systems. (New York: Harper and Brothers, 1960), p. 153.

[3] W.E. Rosenstengel, and J.N. Eastmond. School Finance: Its Theory and Practice. (New York: The Ronald Press Co., 1957), p. 198.

School expenditures can be classified, according to Linn, in six ways; namely, fund, function, character, activity (performance), object, and school (class or other educational unit).[1] The most used combination of these categories is the function-object-character classification, or simply function-object classification of educational expenditures.[2] This classification characterizes the conventional accounting systems, and is thus utilized in this study.

Program Accounting Systems

According to Duke, a program accounting system subsumes the conventional type accounting system.[3] However, in a program accounting system the function-object classification is re-ordered to provide a program format which is utilized in a planning-programming-budgeting system. Duke used a three-dimensional classification of school programs divided according to subject, grade, and type of student; placed in two categories; namely, curricular and non-curricular programs.

This study utilized the performance expenditure classification with the individual school subject being used as the fundamental unit for the purpose of unit costing, with aggregations into curriculum clusters.

---

[1] H.H. Linn. School Business Administration. (New York: The Ronald Press Co., 1956), pp. 200-201.

[2] The function-object classification is described more fully in 'The Research Design,' Chapter 3, infra, p. 21.

[3] William Richard Duke, "A Cost Analysis of Selected Schools in an Urban School System." Unpublished Doctoral Thesis. The University of Alberta, Edmonton, 1970, p. 20.

V. COST ANALYSIS AND PPBS

Burke maintains that the first step to program budgeting is through a vigorous analysis of the organization.[1] Such an analysis culminates in the formation of objectives which are expressed in operational terms. A program structure results from the process, and allocation of expenditures are then based on that program structure. That is, Planning-Programming-Budgeting System (PPBS) is a multi-year program document and an organizational financial document and plan. According to Benson,[2]

> It [PPBS] is a process under which priorities among the kinds of services a school jurisdiction may provide are weighed, alternative means to accomplish these given objectives are analyzed, and a choice among competing means made under criteria of efficiency in the use of resources.

This description of PPBS subsumes that, among other things, cost analysis can perform a vital role in such a systems approach to educational investment.

PPBS is receiving a considerable amount of attention in North America. In particular, in Canada several school systems and educational institutions are in the process of developing and/or phasing in a PPBS program: for example, the Nova Scotia Department of Education,[3] the Alberta Department of Education,[4] and the Ontario

---

[1] A.J. Burke. Financing Public Schools in the United States. (New York: Harper and Brothers, 1957), p. 96.

[2] Ralph Benson. "Planning-Programming-Budgeting: An Educational Application," The N.T.A. Journal, LXII (April, 1971), p. 38.

[3] Warren, op. cit., p. 12.

[4] Alberta, Department of Education. PPBES Newsletter, I (January-February, 1971).

Institute for Studies in Education, Department of Educational Administration.[1]

VI. COST ANALYSIS STUDIES IN EDUCATION

Cost analysis, which has been prevalent in the business world for a considerable length of time, is a relatively recent technique in the area of educational finance. The first cost studies occurred in education around the 1920's, and were probably not attempted prior to this date, due to lack of precision in defining educational output or the educational product.[2]

In 1935 a milestone in education cost analysis occurred when the National Committee on Standards Reports for Institutions of Higher Education developed a method of computing unit costs.[3] This committee had two purposes; namely, to develop a series of analytical procedures to be followed by American colleges and universities, and to induce standardization in cost analysis. Workman maintains that neither purpose seems to be fulfilled since the procedure developed has not been widely followed, and where it was followed it was not standardized.[4]

---

[1]Benson, op. cit., p. 40.

[2]T.E. Glaze. Business Administration for Colleges and Universities. (Baton Rouge: Louisiana State University Press, 1962), p. 128, as cited in William Laurence Workman. "An Analysis of the Operating Expenditures of Three Junior Colleges." Unpublished Master's Thesis, University of Alberta, Edmonton, 1969, p. 3.

[3]Bobby Nyle Cage. "Cost Analysis of Selected Educational Programs in Area Schools of Iowa." Unpublished Doctoral Thesis, Iowa State University, 1968, p. 12.

[4]Workman, op. cit., p. 3.

A series of junior college cost studies was initiated in the province of Alberta by the Board of Post-Secondary Education -- the first being conducted for the Grande Prairie Junior College and Mount Royal Junior College for the year 1967-1968 by P.J. Atherton. With the completion of a study by Workman in 1969, the baseline data were completed for the junior colleges in Alberta.[1]

In the area of elementary and secondary school education, a series of research projects were initiated in 1969 and jointly sponsored by the Alberta Department of Education and the Department of Educational Administration of the University of Alberta. The master plan of this project was to cost analyze representative school units including one urban school unit.

VII. SUMMARY

For the purpose of this study, unit cost analysis refers to the determination of educational expenditures for specific functions, activities, services or performances; the conversion of these expenditures into per pupil unit costs; and the examination and analysis of the per unit costs which result.

Meaningful cost analyses are dependent on the accounting system used. Thus, it is suggested that to facilitate the adoption of cost analyses, the accounting system should be directed towards a program accounting system.

Unit cost analyses are significant as a whole in that they provide data which can assist the school district in (1) achieving an

---

[1] Ibid., p. 4.

operating efficiency, (2) establishing and maintaining an adequate and sufficient educational program, (3) determining the adequacy or inadequacy of school revenues and expenditures, (4) informing the public in a meaningful manner, (5) evaluating school business management, and (6) preparing school budgets.

CHAPTER III

THE RESEARCH DESIGN

I. INTRODUCTION

The purpose of this chapter is to present the general procedural model or design for this study. In accordance with accepted practice in unit cost analysis, the methodology employed in this study is similar to that employed by Myroon[1] with only minor changes where local circumstances dictated.

Uniformity is required in prorating procedures, data collection, terminology, classification, appropriate units for cost expression; and also there has to be a synchronized accounting system. According to Knezevich and Fowlkes, "...there can be no meaningful and comparable data on educational costs among school systems...unless there is a uniformity in accounting terminology and procedures."[2]

Thus this chapter presents the research design employed in this study and suggests uniform standards which may be adopted for unit cost accounting in other Newfoundland and Labrador schools.

II. STAGES IN UNIT COST ANALYSIS

Myroon has defined three distinct stages or phases for a meaningful unit cost analysis.[3] They were employed in this study and are

---

[1] Myroon, op. cit., chapter 2.

[2] Knezevich and Fowlkes, op. cit., p. 153.

[3] Myroon, op. cit., pp. 16-17.

itemized here:

I. Anticipatory Preparation

a. development of uniform terminology,

b. determination of the accounting bases: cash or accrual,

c. establishment of an adequate accounting system based on a uniform performance classification of expenditures.

II. Unit Costing (Procedural Methodology)

a. determination of the period of time for which the per pupil expenditure figure is to be computed (a year, a week, a day, an hour),

b. determination of the appropriate pupil unit to be used: average daily attendance, average daily membership, or pupil enrolment,

c. determination of the areas to be included in a per unit expenditure figure (subjects, programs, and grade levels or divisions, and schools),

d. determination of the proration basis, standard or statistic to be used in allocation of expenditures to schools and areas,

e. determination or estimation of the actual or accrued costs, and

f. estimation of chosen per pupil costs of specified areas.

III. Findings and Analysis

a. extrapolation of the major findings, and

b. analysis of findings and cost data to make comparisons, predict trends, and draw inferences.

III. ANTICIPATORY PREPARATION

Uniform Terminology

The key working definitions pertinent to the problems investigated in this study are presented in Chapter I. To avoid repetition, more appropriate sections of this chapter contain definition of other terms relative to unit cost analysis in general, and this study in particular.

Bases of Accounting: Cash or Accrual

There are two bases for accounting, namely, cash or accrual. Cash accounting refers to the entering of expenditures and revenues only when payment has been made or has been received. Under the accrual system, expenditures are recorded as incurred when services have been rendered or goods are received.

The cash basis is simpler to operate, and for that reason the school district, in which this study was conducted, did not use the accrual system. Consequently, this study utilized a modified cash-accrual system of procuring cost data. That is, costs were extracted only for the period of time involved in the study, irrespective of the time of entries. This meant that a check of invoices had to be made to ensure an accurate account of actual costs for the specified period of time involved in this cost study.

Expenditure Classification

This study classified expenditures by functions and activities and analyzed them in terms of outputs. That is, the study utilized a performance expenditure classification, in the broad sense, as

interpreted by Benson[1] and Burkhead[2]. This involves an amalgamation of the concepts of all systems of expenditure classification; namely, function, object, character, and location.

Figures 1, 2, and 3 represent the performance-based unit cost analysis expenditure classification used in this study. Figure 1 presents the broadest classification of expenditures. Certain areas were excluded because of their irrelevance to either the school district studied or this study: These include, Food Services, Student Body Activities, Community Services, Capital Outlay, Debt Services, and Outgoing Transfer Accounts.

Figure 2 presents the specific classification used in this study for classifing all expenditure data.

Figure 3 presents the grades that comprise the Divisions referred to in this study.

Location and Performance Classifications

Location Classification This classification refers to the schools within a school district. In some cost studies only a sampling of the schools are costed. In this study all fifteen schools in the school district were costed.

Performance Classification The first category of performance is the classification by grade level. Since it was assumed that the

---

[1]C.S. Benson. The Economics of Public Education. (Boston: Houghton Mifflin Company, 1961), p. 484.

[2]Jesse Burkhead. Public School Finance: Economics and Politics. (Worcester: Hefferman Press, 1964), p. 488.

FIGURE 1

CLASSIFICATION OF EXPENDITURES[1]

Series	Type of Expenditure
100	ADMINISTRATION
200	INSTRUCTION
300	PUPIL TRANSPORTATION SERVICES
400	PLANT OPERATION
500	PLANT MAINTENANCE
600	FIXED CHARGES

[1]Adapted from Paul L. Reason and Alpheus L. White, (Eds.) Financial Accounts for Local and State School Systems, Standard Receipt and Expenditure Accounts. Bulletin 1957, No. 4, U.S. Office of Education. (Washington, D.C.: U.S. Government Printing Office, 1957), chapter 3.

FIGURE 2

FUNCTION-OBJECT CLASSIFICATION OF EDUCATIONAL EXPENDITURES

Series	Type of Expenditure
100	ADMINISTRATION
	a. Salaries
	b. Expenses
200	INSTRUCTION
	a. Direct Salaries
	1. instruction
	b. Indirect Salaries
	1. administration
	2. clerical
	3. guidance and counselling
	4. library
	c. Indirect-direct Expenses
	1. instructional materials
	2. teaching supplies
	3. equipment
	i. physical education
	ii. other
	4. others
300	PUPIL TRANSPORTATION SERVICES
400	PLANT OPERATION
	a. Salaries
	b. Utilities
	c. Supplies
	d. Central Office
	e. Others
500	PLANT MAINTENANCE
600	FIXED CHARGES

FIGURE 3

GRADE LEVEL CLASSIFICATION BY DIVISION[1]

Division or Level I	-	Grade Kindergarten to Grade Two inclusive
Division or Level II	-	Grade Three to Grade Five inclusive
Division or Level III	-	Grade Six to Grade Eight inclusive
Division or Level IV	-	Grade Nine to Grade Eleven inclusive

[1] In succeeding pages, Divisions I, II, III, and IV will refer to the corresponding grades noted in this Figure.

educational expenditures in the various grade levels varied significantly, grade levels were also combined into Divisions as shown in Figure 3, page 27.

The second category of performance classification is that of individual subjects offered in the schools being costed. Individual subjects were also combined into subject clusters as shown in Figures 4 to 7, pages 113-116. Only direct instructional costs [Series 200(a)] were allocated to individual subjects; however, most of the remaining expenditure categories were also costed to grade levels and divisions.

Expenditure Classification Items[1]

100 Administration 'Administration' refers to the school district-wide activities which regulate, direct, and control the affairs of the school district. These activities are not confined to any particular subject, school, or phase of the school operations.

200 Instruction 'Instruction' includes the accounts which are aimed directly toward, or aid in, the instruction of pupils or the improvement of the quality of teaching. This includes such personnel as teachers, school administrators, supervisors and consultants, department heads, librarians, guidance and counselling personnel, and substitute and part-time teachers.

200(a) Direct Salaries 'Direct Salaries' include full-time salaries as well as prorated portions of salaries for all teaching

---

[1]A more detailed account of items of inclusion and exclusion is contained in Knezevich and Fowlkes, op. cit., chapter 7; and Reason and White, op. cit., chapter 4.

personnel services rendered to pupils in the school district.

200(b) Indirect Salaries 'Indirect salaries' include the full-time salaries or prorated portions of salaries of personnel who are only indirectly involved in the teaching of pupils or the improvement of instruction. Librarians and administrators are examples of personnel that comprise this category.

200(c) Direct-Indirect Expenses 'Direct-indirect expenses' include all expenses incurred for teaching activities or the improvement of instruction, either directly or indirectly. Instructional materials [Series 200(c)1] include school library resource materials such as books, magazines, pictures, films, recording magnetic tapes, and other audio-visual materials. Teaching supplies [Series 200(c)2] include other expenditures for supplies which are used in the teaching-learning process, specifically defined as all those items which cannot be allocated to Physical Education equipment [Series 200(c)3i] or other equipment, for example, tape-recorders, record-players, film projectors, radio and television sets, et cetera. Examples of teaching supplies are paper, chaulk, duplicating ink and fluid, stencils, et cetera.

Others [Series 200(c)5] refer to expenditures which cannot readily be allocated to another expenditure category. Examples are supplies for in-service training, printing of report and progress cards, et cetera.

300 Pupil Transportation Services 'Pupil transportation services' include all expenditures for the conveyance of students to

and from school activities, either between home and school, or on trips for curricular or co-curricular activities.

400 Plant Operation 'Plant operation' consists of the expenses of the housekeeping activities, as are repeated on a regular basis, which keep the physical plant ready and open for use. Repairs and replacement of equipment and facilities are excluded.

Salaries [Series 400(a)] refer to salaries for plant custodians and other related personnel. Utilities [Series 400(b)] include costs of water and sewage, electricity, telephone, heat, et cetera. Supplies [Series 400(c)] include custodial supplies, et cetera. Central office [Series 400(d)] refers to costs of operating the school district Central Office building. Others [Series 400(e)] refer to expenses related to plant operations but are difficult to allocate to another expenditure category.

500 Plant Maintenance 'Plant maintenance' refers to expenses incurred by those activities which are concerned with the keeping of grounds, buildings, and equipment in a condition of completeness and efficiency.

600 Fixed Charges 'Fixed charges' include expenses of a general recurrent nature, but are not readily allocatable to other expenditure accounts. Examples are property insurance and liability insurance.

IV. UNIT COSTING (PROCEDURAL METHODOLOGY)

Costing involves the procedures of determining; the period of time for which the per pupil expenditure figure is to be computed,

the appropriate pupil unit, the areas to be included, the proration basis, the actual or estimated costs in the expenditure categories, and the per pupil costs of the specified areas.

Period of Time for Per Pupil Expenditures

According to accepted practice in unit cost analysis,[1] this study involved the computation of per pupil expenditures on an annual basis. The 1970-1971 school year was chosen.

Appropriate Pupil Unit

The most common unit for determining expenditure costs is a per pupil attendance unit, the three possible measures being (1) enrolment as of a specified date, (2) average daily attendance, (3) average daily enrolment.[2] For the purpose of this study enrolment as of October 31, 1970 was used since the other two statistics were not available. Summary enrolment information is presented in Appendix D, page 149.

Proration Basis for Each Expenditure Series

The proration methods utilized in this study are presented in Table I. The proration methods chosen for the allocation of expenditures to various schools, grade levels, and subjects were chosen because it was assumed that they were equitable, adequate, and realistic.

---

[1] Reason and White, op. cit., p. 129; and Myroon, op. cit., p. 41

[2] Canada, Dominion Bureau of Statistics, Education Department. A Manual of Accounting for School Boards. Catalogue No. 12-528. (Ottawa: Queen's Printer, 1966), p. 67.

TABLE I

PRORATION METHODS UTILIZED IN ALLOCATING EXPENDITURES TO SCHOOLS, GRADES, AND SUBJECTS

Expenditure Series	Proration Method		
	School	Grade	Subject
100 ADMINISTRATION			
a. Salaries	NP	NP	T
b. Expenses	NR	NP	
200 INSTRUCTION			
a. Direct Salaries			
1. instruction	AE&T[1]	T	T
b. Indirect Salaries			
1. administration	AE&T	T&NP	
2. clerical	AE&T	T&NP	
3. guidance and counselling	AE&T	T&NP	
4. library	AE&T	T&NP	
c. Indirect-Direct Expenses			
1. instructional materials	AE&NP	AE&NP	NP
2. teaching supplies	AE&NP	AE&NP	NP
3. equipment			
i. physical education	AE	AE&NP	NP
ii. other	AE&NP	AE&NP	NP
4. others	AE&NP	NP	
300 PUPIL TRANSPORTATION SERVICES	AE	NP	
400 PLANT OPERATION			
a. Salaries	AE	NP	
b. Utilities	AE	NP	
c. Supplies	AE&NR	NP	
d. Central Office	NR	NP	
e. Others	NP	NP	
500 PLANT MAINTENANCE	AE	NP	
600 FIXED CHARGES	AE	NP	

Legend: T - time NR - number of rooms
NP - number of pupils AE - actual expenditures

[1]Sometimes it is recommended that more than one proration method be used.

Methods of Prorating[1] Many methods for prorating expenditures have been devised. The proration methods and definitions utilized in this study are presented below.

The 'Time' method of prorating is based on the idea of allocating the expenditure of a given activity in proportion to the time spent on each given activity. For example, a teacher who teaches Grade Eight mathematics for seventy per cent (70%) of his employed time, and works in the school library for the remaining thirty per cent (30%), would have his salary allocated as follows: seventy per cent (70%) would be allocated to Grade Eight mathematics (and Division III), and thirty per cent (30%) would be allocated to library [Series 200(b)4].

The 'Number of Pupils' method of prorating expenditures allocates them in proportion to the actual number of pupils. This method is often used when other methods are inapplicable.

The 'Number of Rooms' method of prorating expenditures allocates them to a specific grade level or school in proportion to the number of registered home rooms either of that grade or in that school.

The 'Actual Expenditure' method allocates expenditures to a given activity or task according to the actual expenditure for a service or good chargeable to that activity or task.

Proration Calculations The standard formula for prorating, as developed by Evans,[2] was used where possible in this study.

---

[1]A more detailed account of proration methods is presented in Reason and White, op. cit., pp. 130-139; Knezevich and Fowlkes, op. cit., pp. 162-166; and Canada, DBS, op. cit., pp. 63-65.

[2]J.M. Evans. "Total Costs of Educational Programs," College and University Business, XVII (September, 1954), pp. 41-45.

The proration formula is, $X = \frac{A}{C} \times B$ where,

X = exact cost allocated to a school, grade level, or subject for a specified activity or service,

A = quantity of unit used only in the school, grade level, or subject,

B = expenditure allocated to a school, grade level, or subject for a given activity or service, and

C = total quantity of unit used in the school district, school, grade level, or subject for a given activity or service.

For example, a librarian who spends fifty per cent (50%) of his time devoted to Division III, and whose salary is ten thousand dollars ($10,000.00), would have fifty per cent (50%) of his salary or five thousand dollars ($5,000.00) allocated to Library [Series 200(b)4] in Division III. All proration calculations in this study were made on this same basis.

Estimation of Actual Costs

At this stage of the unit costing the accrued and actual costs for each expenditure account must be procured. This necessitates the utilization of ledger sheets, payroll journals, and reference invoices.

Estimation of Chosen Per Pupil Costs

This stage of unit costing requires the calculation of per pupil costs for various activities. The proration calculations for allocating expenditures to the various schools, grade levels, and subjects have to be made. In this study a calculator was used for this purpose: however, it is possible to computer program the data.

V. FINDINGS AND ANALYSIS

After per pupil costs are computed and the information posited in appropriate Tables, the significant findings have to be extrapolated from the data. As used in this study, significance is not based on a specific correlation or relationship between variables under discussion, but rather on reasons for the differences among the variables.

On the basis of the data contained in the Tables, comparisons, predictions, and inferences were made.

VI. SUMMARY

This chapter presented the general procedural model utilized in this study and suggested uniform standards which may be adopted for unit costing or unit cost accounting. The methodology established by Myroon[1] was used where possible, with modifications introduced only where local conditions necessitated.

---

[1]This was done in consultation with John Lyon Myroon by correspondence dated January 29, 1971.

CHAPTER IV

DATA SOURCES, COLLECTION, AND TREATMENT

I. INTRODUCTION

This study was concerned with the application of a cost analysis model to the financial expenditures of a selected school district for the 1970-1971 school year. This entailed ascertaining expenditure data sources and procuring the appropriate data. Prior to the computation of pupil costs, the expenditure data had to be prorated to specific schools, grades, and subjects, as well as to subject clusters and program routes.

II. DATA SOURCES AND COLLECTION

The necessary expenditure data were obtained from two main sources; namely, the financial ledgers of the school district, and the Faculty Workload Survey questionnaire. Any additional information needed was obtained through interviews of primary sources and referrals to schools' operational records such as monthly reports, timetables, and registration forms. The latter were made available through the district superintendent's office.

Information relevant to staff workload was gathered through the Faculty Workload Survey questionnaire. (see Appendix E, page 153). Information procured from this survey consisted of (1) the teacher's name, (2) the school taught in, (3) the subjects taught, (4) the time spent per subject, (5) the enrolment in the subject, and (6) the time spent performing duties other than direct teaching.

The financial ledgers of the district in most cases accounted the expenditures on a school basis; however, further proration had to be made. Proration methods, which differed according to the expenditure category, are outlined in the following section of this chapter.

III. TREATMENT OF DATA

The educational expenditures were prorated to specific schools, grades, and subjects where possible by proration methods established by the researcher in consultation with the business manager. Per pupil costs were computed by means of a desk calculator and determined by dividing the total apportioned expenditure for the school, grade, or subject, et cetera, by the respective number of pupils enrolled.

100 Administration

Administration salaries [Series 100(a)] were prorated on a number of pupils basis. It was assumed by the district office staff that their time was distributed among schools approximating the size of the school as reflected by the number of pupils registered in the school.

Administration expenses [Series 100(b)], that is, the costs of administering education throughout the district, were prorated to schools according to the number of classrooms, on the assumption that the larger schools required more administrative attention.

200 Instruction

Direct salaries [Series 200(a)] were allocated to schools according to the actual expenditure per school. This expenditure was then prorated to individual subjects, and indirectly to grades or programs,

on the basis of the amount of time each teacher devoted to each individual subject.

Indirect salaries [Series 200(b)], that is, local administrative, guidance and counselling, clerical, and librarians' salaries were prorated to schools according to actual expenditure per school and on the basis of the amount of time spent carrying out duties in one or more of these areas. These salaries were further allocated to particular grades on the basis of time spent on each grade level with the number of pupils method being used on the unallocatable portion, if any.

Indirect-direct expenses [Series 200(c)] were allocated to schools according to actual expenditures. However, in some cases, especially the category 'others' [Series 200(c)4], certain expenditures were not readily allocatable, in which cases the number of pupils method of proration was used.

300 Pupil Transportation Services

All transportation expenditures were directly allocated to individual schools on the basis of the actual expenditure per busing contracts. The number of pupils method was used to prorate these expenditures further to grade levels.

400 Plant Operation

Salaries, utilities, and supplies were chargeable directly to each school according to actual expenditures, with the exception of some expenditures for supplies which were prorated according to the number of rooms method. Unallocatable expenses [Series 400(e)] were prorated to schools according to the number of pupils method. Central office

[Series 400(d)] expenditures were allocated to schools according to the number of rooms method.

All expenditures in the Series 400 were prorated to grades by means of the number of pupils method.

500 Plant Maintenance

This expenditure was recorded as actual expenditure per school and was thus allocated as such. The number of pupils prorating method was used to prorate the expenditures to grades.

600 Fixed Charges

These expenditures were allocated to schools according to the actual expenditures and were then prorated to grades on the basis of the number of pupils method.

IV. SUMMARY

The purpose of this chapter was to outline the sources, collection, and treatment of the data. Data were obtained from the financial ledgers of the school district, the Faculty Workload Survey questionnaire, and from interviews of primary sources as well as from referrals to schools' operational records. Prior to computation of pupil costs, the financial data had to be prorated to individual schools, grades or programs, and subjects.

CHAPTER V

PER PUPIL COSTS

I. INTRODUCTION

The purpose of this chapter is to report findings relative to the six sub-problems as outlined in Chapter I; namely, (1) the total district educational costs, (2) the district per pupil costs, (3) the per pupil costs of each school, (4) the per pupil costs of each subject, (5) the per pupil costs of each subject cluster, and (6) the per pupil costs of each grade level or program route.

The expenditures analyzed are those attributed to the function-object classification, as outlined in Chapter III, in the selected school district, and are confined to the 1970-1971 school year. These expenditures are reported in the following sections of this chapter. The methodologies, terminologies, and unit costs used in this study were defined in Chapters I, II, and III.

To conform to accepted practice in unit costing, the expenditures analyzed in this study exclude debt charges, interest, depreciation, and capital outlay expenditures.

II. ESTIMATED DISTRICT TOTAL COSTS AND PER PUPIL COSTS

For the 1970-1971 school year, the total educational cost in the school district, as reported in Table II, amounted to $1,763,164.28 which averaged an estimated per pupil cost of $327.48. The highest expenditure, instruction [Series 200], represented 68.6 per cent of the total expenditures or $224.59 per pupil. This was followed by pupil

TABLE II

ESTIMATED AVERAGE PER PUPIL COSTS IN THE SCHOOL DISTRICT BY AGGREGATE EXPENDITURE SERIES: 1970-1971

Expenditure Series	Total Expenditures($)	% District Expenditure	Cost Per Pupil($)[1]
100 ADMINISTRATION	52,111.11	3.0	9.68
200 INSTRUCTION	1,209,214.78	68.6	224.59
300 PUPIL TRANSPORTATION SERVICES	298,708.00	16.9	55.48
400 PLANT OPERATION	156,983.85	8.9	29.16
500 PLANT MAINTENANCE	28,829.47	1.6	5.35
600 FIXED CHARGES	17,317.07	1.0	3.22
TOTAL	1,763,164.28	100.0	327.48

[1]Estimated costs per pupil are based on an enrolment of 5,384 pupils, and represent the average cost for each pupil registered in the district.

transportation services [Series 300] which totalled 16.9 per cent of the total expenditures or $55.48 per pupil. The remaining 14.5 per cent of the total expenditures in the district was allocated to administration [Series 100], plant operation [Series 400], plant maintenance [Series 500], and fixed charges [Series 600]; which accounted for 3.0 per cent, 8.9 per cent, 1.6 per cent, and 1.0 per cent respectively.

Table III shows the total expenditures with percentages and the estimated average per pupil costs for each specified expenditure classification. This breakdown of the aggregate expenditure series results in a more significant analysis in that the cost per pupil figures are related to more specific classifications of expenditures.

Both the Expenditure Series 200(c)4 and 400(e) resulted in an estimated average per pupil cost of less than twenty-five cents ($0.25) and therefore, in Table III, no figures are reported for these categories since it is assumed that a per pupil cost of less than twenty-five cents ($0.25) is insignificant.

Direct salaries for instruction [Series 200(a)1], that is, teachers' salaries, accounted for 58.4 per cent of the total district expenditure, or $1,029,238.09; while the indirect salaries for instruction [Series 200(b)] accounted for 7.5 per cent, or $131,473.81. Plant operation salaries [Series 400(a)] accounted for 4.5 per cent, or $78,614.16. This was the highest expenditure allocated to the aggregate expenditure plant operation [Series 400].

III. ESTIMATED TOTAL COSTS AND PER PUPIL COSTS BY SCHOOL

The estimated total operational costs per school are presented in Table IV, while the average estimated per pupil costs are presented in Table V. The total costs range from a high of $591.49 in School G to a

TABLE III

ESTIMATED AVERAGE PER PUPIL COSTS BY SPECIFIED EXPENDITURE CLASSIFICATION IN THE SCHOOL DISTRICT, 1970-1971

Expenditure Series	Total Expenditures($)	% of District Expenditure	Cost per Pupil Enrolled($)
100 ADMINISTRATION			
a. Salaries	44,193.91	2.5	8.21
b. Expenses	7,917.20	0.5	1.47
200 INSTRUCTION			
a. Direct salaries			
1. Instruction	1,029,238.09	58.4	191.17
b. Indirect salaries			
1. Administration	101,887.22	5.8	18.92
2. Clerical	17,407.85	1.0	3.23
3. Guidance and counselling	2,653.53	0.2	0.49
4. Library	9,525.21	0.5	1.77
c. Indirect-direct expenses			
1. Instructional materials	25,008.64	1.4	4.64
2. Teaching supplies	10,975.70	0.6	2.04
3. Equipment			
i. Phys. Educ.	3,954.44	0.2	0.73
ii. Other	8,051.94	0.5	1.50
4. Others [1]	-		
300 PUPIL TRANSPORTATION SERVICES	298,708.00	16.9	55.48
400 PLANT OPERATION			
a. Salaries	78,614.16	4.5	14.60
b. Utilities	54,271.38	3.1	10.08
c. Supplies	14,204.59	0.8	2.64
d. Central office	8,739.07	0.5	1.62
e. Others [1]	-		
500 PLANT MAINTENANCE	28,829.47	1.6	5.35
600 FIXED CHARGES	17,317.07	1.0	3.22
TOTAL	1,761,497.47	100.0	327.38

[1] No figures are entered for Expenditure Series 200(C)4 and 400(e) since the per pupil cost for each of these categories is less than twenty-five cents and therefore considered insignificant.

TABLE IV

ESTIMATED TOTAL OPERATIONS COSTS ALLOCATED PER EXPENDITURE CLASSIFICATION BY SCHOOL IN THE SCHOOL DISTRICT: 1970-1971

Expenditure Series	Cost Per School ($) A	B	C	D	E
100 ADMINISTRATION					
a. Salaries	4,384.04	6,911.93	3,570.87	2,337.86	2,324.60
b. Expenses	753.72	1,132.16	670.59	334.90	418.82
200 INSTRUCTION					
a. Direct Salaries	160,283.08	149,050.90	81,326.94	36,059.58	45,099.86
1. Instruction					
b. Indirect Salaries					
1. Administration	22,909.19	8,124.61	7,470.28	5,683.99	2,742.93
2. Clerical	3,069.84	1,752.23	1,816.69	1,563.11	-
3. Guidance and Counselling	-	-	-	-	877.48
4. Library	4,461.05	-	-	-	-
c. Indirect-Direct Expenses					
1. Instructional materials	2,480.86	3,911.35	2,020.70	1,322.96	1,315.45
2. Teaching supplies	2,798.72	615.35	205.54	420.11	589.69
3. Equipment					
i. Physical Education	2,002.91	37.51	1,914.02	-	-
ii. Other	2,951.23	63.56	130.01	197.95	-
4. Others	131.95	96.54	-	1.60	11.03
300 PUPIL TRANSPORTATION SERVICES	68,530.00	26,200.00	-	-	1,370.00

TABLE IV (continued)

Expenditure Series	Cost Per School ($) A	B	C	D	E
400 PLANT OPERATION					
a. Salaries	11,995.39	9,219.05	7,953.18	1,396.47	3,222.25
b. Utilities	8,672.95	6,732.63	5,977.89	2,086.05	3,128.95
c. Supplies	1,331.97	1,798.48	538.08	412.18	666.84
d. Central Office	831.96	1,249.68	740.20	369.66	462.30
e. Others	114.54	180.59	93.30	61.08	60.73
500 PLANT MAINTENANCE	3,343.24	1,514.45	139.69	334.29	11,692.91
600 FIXED CHARGES	2,349.28	1,475.16	1,409.82	362.65	526.10
Total	303,395.92	220,066.18	115,977.80	52,944.44	74,509.94

TABLE IV (continued)

Expenditure Series	Cost Per School ($) F	G	H	I	J
100 ADMINISTRATION					
a. Salaries	2,077.11	1,617.50	2,633.96	1,034.14	1,091.59
b. Expenses	418.82	292.94	502.74	209.81	250.98
200 INSTRUCTION					
a. Direct Salaries					
1. Instruction	41,826.38	50,771.37	38,973.58	32,556.30	25,101.97
b. Indirect Salaries					
1. Administration	4,670.05	7,714.50	4,283.48	1,494.73	996.48
2. Clerical	-	-	-	-	-
3. Guidance and COunselling	-	-	-	207.29	-
4. Library	-	3,041.08	-	-	-
c. Indirect-Direct Expenses					
1. Instructional materials	1,175.41	915.32	1,490.51	585.20	617.71
2. Teaching supplies	384.44	328.20	657.81	650.56	88.77
3. Equipment					
i. Physical Education	-	-	-	-	-
ii. Other	-	275.10	353.15	592.12	-
4. Others	-	5.83	9.50	6.00	-
300 PUPIL TRANSPORTATION SERVICES	8,000.00	35,500.00	11,000.00	5,250.00	1,750.00

TABLE IV (continued)

Expenditure Series	Cost Per School F	G	H	I	J
400 PLANT OPERATION					
a. Salaries	2,259.54	6,019.96	2,524.23	4,501.41	1,556.07
b. Utilities	1,822.17	4,331.84	3,368.63	1,381.76	944.81
c. Supplies	455.32	1,888.77	888.30	1,327.06	-
d. Central Office	462.30	323.35	554.93	231.59	277.03
e. Others	54.27	68.82	42.26	28.52	27.02
500 PLANT MAINTENANCE	539.65	1,317.15	1,871.34	243.17	-
600 FIXED CHARGES	296.29	2,182.89	78.59	417.13	382.88
Total	64,441.75	116,594.62	69,233.01	50,716.79	33,085.31

TABLE IV (continued)

Expenditure Series	Cost Per School ($) K	L	M	N	O
100 ADMINISTRATION					
a. Salaries	1,984.31	2,784.22	3,243.83	3,438.29	4,759.68
b. Expenses	376.86	502.74	753.72	544.70	753.72
200 INSTRUCTION					
a. Direct Salaries					
1. Instruction	40,244.71	62,780.24	94,129.22	70,389.76	100,644.20
b. Indirect Salaries					
1. Administration	432.04	3,455.56	10,109.26	8,387.06	13,413.06
2. Clerical	-	4,800.87	-	1,156.08	3,249.03
3. Guidance and Counselling	-	-	990.72	578.04	-
4. Library	-	-	-	-	2,023.08
c. Indirect-Direct Expenses					
1. Instructional materials	1,122.89	1,575.54	1,835.63	1,945.67	2,693.43
2. Teaching supplies	375.00	716.84	613.70	1,041.00	1,489.97
3. Equipment					
i. Physical Education	-	-	-	-	-
ii. Other	-	798.66	342.02	807.97	1,540.17
4. Others	9.84	-	42.78	22.91	174.18
300 PUPIL TRANSPORTATION SERVICES	9,308.00	10,300.00	44,000.00	35,500.00	42,000.00

TABLE IV (continued)

Expenditure Series	Cost Per School ($) K	L	M	N	O
400 PLANT OPERATION					
a. Salaries	3,417.97	3,242.99	4,769.31	5,606.20	10,930.14
b. Utilities	1,651.56	3,399.27	2,429.60	2,866.05	5,477.22
c. Supplies	376.55	731.37	855.40	1,100.15	1,834.12
d. Central Office	415.98	554.93	831.96	601.25	831.96
e. Others	51.84	72.74	84.75	89.83	124.36
500 PLANT MAINTENANCE	122.04	2,525.96	2,034.39	456.41	2,694.74
600 FIXED CHARGES	878.41	756.70	1,338.14	2,224.25	2,638.78
Total	60,768.00	98,998.63	168,404.43	136,755.62	197,271.84

TABLE V

ESTIMATED AVERAGE PER PUPIL COSTS PER EXPENDITURE CLASSIFICATION BY SCHOOL IN SCHOOL DISTRICT: 1970-71

	Cost per Pupil per School									
	A		B		C		D		E	
Expenditure Series	$	%	$	%	$	%	$	%	$	%
100 ADMINISTRATION										
a. Salaries	8.21	1.4	8.21	3.1	8.21	3.1	8.20	4.4	8.21	3.1
b. Expenses	1.41	0.2	1.34	0.5	1.54	0.6	1.18	0.6	1.48	0.6
200 INSTRUCTION										
a. Direct salaries										
1. Instruction	300.16	52.9	177.02	67.8	186.96	70.2	126.52	68.2	159.36	60.6
b. Indirect salaries										
1. Administration	42.90	7.6	9.65	3.7	17.17	6.4	19.94	10.7	9.69	3.7
2. Clerical	5.75	1.0	2.08	,.8	4.18	1.6	5.48	3.0	-	
3. Guidance and Counselling	-		-		-		-		3.10	1.2
4. Library science	8.35	1.5	-		-		-		-	
c. Indirect-direct expenses										
1. Instructional material	4.65	0.8	4.65	1.8	4.65	1.7	4.64	2.5	4.65	1.8
2. Teaching supplies	5.24	0.9	0.73	0.3	0.47	0.2	1.47	0.8	2.08	0.8
3. Equipment										
i. Phys. Education	3.75	0.7	-		4.40	1.7				
ii. Other	5.53	1.0	-		0.30	0.1	0.69	0.4	-	
300 PUPIL TRANSPORTATION SERVICES	128.33	22.6	31.12	11.9	-		-		4.84	1.8
400 PLANT OPERATION										
a. Salaries	22.46	4.0	10.95	4.2	18.28	6.9	4.90	2.6	11.39	4.3
b. Utilities	16.24	2.9	8.00	3.1	13.74	5.2	7.32	3.9	11.06	4.2
c. Supplies	2.49	0.4	2.14	0.8	1.24	0.5	1.45	0.8	2.36	0.9
d. Central office	1.56	0.3	1.48	0.6	1.70	0.6	1.30	0.7	1.63	0.6

TABLE V (CONTD)

Expenditure Series	Cost per Pupil per School									
	A		B		C		D		E	
	$	%	$	%	$	%	$	%	$	%
500 PLANT MAINTENANCE	6.26	1.1	1.80	0.7	0.32	0.1	1.17	0.6	41.32	15.7
600 FIXED CHARGES	4.40	0.8	1.75	0.7	3.24	1.2	1.27	0.7	1.86	0.7
TOTAL [a]	567.69	100.1	260.92	100.0	266.40	100.1	185.53	99.9	263.03	100.0

TABLE V (CONTD)

Expenditure Series	Cost per Pupil per School ($)									
	F		G		H		I		J	
	$	%	$	%	$	%	$	%	$	%
100 ADMINISTRATION										
a. Salaries	8.21	3.2	8.21	1.4	8.21	3.8	8.21	2.0	8.21	3.3
b. Expenses	1.66	0.7	1.49	0.3	1.57	0.7	1.67	0.4	1.89	0.8
200 INSTRUCTION										
a. Direct salaries										
1. Instruction	165.32	65.0	257.72	43.6	121.41	56.4	258.38	64.2	188.74	75.9
b. Indirect salaries										
1. Administration	18.46	7.3	39.16	6.6	13.34	6.2	11.86	2.9	7.49	3.0
2. Clerical	-		-		-		-		-	
3. Guidance/counselling	-		-		-		1.65	0.4		
4. Library science	-		15.44	2.6	-		-		-	
c. Indirect-direct expenses										
1. Instructional materials	4.65	1.8	4.65	0.8	4.64	2.2	4.64	1.2	4.64	1.9
2. Teaching Supplies	1.52	0.6	1.67	0.3	2.05	1.0	5.16	1.3	0.68	0.3
3. Equipment										
i. Phys. Educ.	-		-		-		-		-	
ii. Other	-		1.40	0.2	1.10	0.5	4.70	1.2	-	
300 PUPIL TRANSPORTATION SERVICES	31.62	12.4	180.20	30.5	34.27	15.9	41.67	10.4	13.16	5.3
400 PLANT OPERATION										
a. Salaries	8.93	3.5	30.56	5.2	7.86	3.7	35.73	8.9	11.70	4.7
b. Utilities	7.20	2.8	21.99	3.7	10.49	4.9	10.97	2.7	7.10	2.9
c. Supplies	1.80	0.7	9.59	1.6	2.77	1.3	10.53	2.6	2.08	0.8
d. Central office	1.83	0.7	1.64	0.3	1.73	0.8	1.84	0.5	-	

TABLE V (CONTD)

Expenditure Series	Cost per Pupil per School ($)									
	F		G		H		I		J	
	$	%	$	%	$	%	$	%	$	%
500 PLANT MAINTENANCE	2.13	0.8	6.69	1.1	5.83	2.7	1.93	0.5	-	
600 FIXED CHARGES	1.17	0.5	11.08	1.9	-		3.31	0.8	2.89	1.2
TOTAL [a]	254.50	100.0	591.49	100.1	215.27	100.1	402.25	100.0	248.58	100.1

TABLE V (CONTD)

Expenditure Series	Cost per Pupil per School K $	K %	L $	L %	M $	M %	N $	N %	O $	O %
100 ADMINISTRATION										
a. Salaries	8.20	3.3	8.21	2.8	8.21	1.9	8.21	2.5	8.21	2.4
b. Expenses	1.56	0.6	1.48	0.5	1.91	0.4	1.30	0.4	1.30	0.4
200 INSTRUCTION										
a. Direct salaries										
1. Instruction	166.30	66.3	185.19	63.5	238.30	55.9	167.99	51.5	173.52	51.1
b. Indirect salaries										
1. Administration	1.79	0.7	10.19	3.5	25.59	6.0	20.02	6.1	23.13	6.8
2. Clerical	-		14.16	4.9	-		2.76	0.8	5.60	1.6
3. Guidance/counselling	-		-		2.51	0.6	1.38	0.4	-	
4. Library science	-		-		-		-		3.49	1.0
c. Indirect-direct expenses										
1. Instructional materials	4.64	1.8	4.65	1.6	4.65	1.1	4.64	1.4	4.64	1.4
2. Teaching supplies	1.55	0.6	2.11	0.7	1.55	0.4	2.48	0.8	2.57	0.8
3. Equipment										
i. Phys. Educ.	-		-		-		-		-	
ii. Other	-		2.36	0.8	0.87	0.2	1.93	0.6	2.66	0.8
300 PUPIL TRANSPORTATION SERVICES	38.46	15.3	30.38	10.4	111.39	26.1	84.73	26.0	72.41	21.3
400 PLANT OPERATION										
a. Salaries	14.12	5.6	9.57	3.3	12.07	2.8	13.38	4.1	18.85	5.6
b. Utilities	6.82	2.7	10.03	3.4	6.15	1.4	6.84	2.1	9.44	2.8
c. Supplies	1.56	0.6	2.16	0.7	2.17	0.5	2.63	0.8	3.16	0.9
d. Central office	1.72	0.7	1.64	0.6	2.11	0.5	1.43	0.4	1.43	0.4

TABLE V (CONTD)

Expenditure Series	Cost per Pupil per School									
	K		L		M		N		O	
	$	%	$	%	$	%	$	%	$	%
500 PLANT MAINTENANCE	0.50	0.2	7.45	2.6	5.15	1.2	1.09	0.3	4.65	1.4
600 FIXED CHARGES	3.63	1.4	2.23	0.8	3.39	0.8	5.31	1.6	4.55	1.3
TOTAL [a]	250.85	99.8	291.81	100.1	426.02	99.8	326.12	99.8	339.61	100.0

[a]Total percentage figure is not necessarily 100.0 because of 'rounding'.

low of $185.53 in School D. The estimated average total per pupil cost in the district was $327.38. The range in total per pupil costs appears to be the resultant of four main factors: enrolment, the number of grades offered, the teachers' training and experience, and the degree of centralization of the school system. For example, School G had less than seventy per cent (70%) of the number of pupils enrolled at School D; School G offered only grades seven to eleven, while School D offered grades kindergarten to seven; at school G the average number of years of teacher training and experience were 6.0 and 2.5 respectively, while at School D the figures were 3.9 and 1.7 respectively; and the degree of centralization as inferred from the per pupil cost of pupil transportation services was that School G had a per pupil cost of $180.20 for this service, while School D had no expenditure allocated to this category.

With regard to per pupil costs by school per expenditure series, significant differences can be observed in the following categories: direct instructional costs [Series 200(a)], administration [Series 200(b) 1], and pupil transportation services [Series 300].

The direct instructional per pupil costs varied from $121.41 at School H to $300.16 at School A, a difference in per pupil costs of $178.75. This cost, however, when considered in terms of the total per pupil cost per school, assumes a different perspective. For example, the direct instructional cost at School H represented 56.4 per cent of the total school per pupil expenditure, while that at School A represented 52.9 per cent. No patterned relationship between school size and direct instructional expenditure is evident, mainly because teachers'

salaries are a function of teacher training and experience. (see Table XXXVII, page 151).

Administrative costs ranged from a high of $42.90 per pupil at School A to a low of $1.79 per pupil at School K. Differences occurred in per pupil costs in this category mainly because of variations in the amount of time spent on administering schools.

Where expenditures were allocated to pupil transportation services [Series 300], the per pupil costs ranged from $4.84 at School E to $180.20 at School G. The number of buses transporting pupils to a school and the number of respective miles travelled explains the variation in per pupil costs in this category.

IV. DIRECT INSTRUCTIONAL PER PUPIL COSTS PER SUBJECT BY GRADE DIVISION

The estimated per pupil costs of teaching each subject in the school district in the school year 1970-1971 are found in Tables VI to IX inclusive. The costs of instructing a subject consist of direct instructional costs only [Series 200(a)]. Although other indirect and implementary costs affect the total cost, allocation of these to specific subjects is difficult. The estimated total per pupil costs per subject, however, is not significantly different by considering only direct instructional costs since other costs [Series 200(c)] usually amount to an insignificant amount of the total subject costs.

The per pupil cost of teaching each subject is a function of the number of pupils enrolled in the subject, the length of time the subject is offered, and the teachers' salaries as determined by experience and

training. The per pupil subject costs were determined by (1) prorating teachers' salaries to specific subjects, and (2) dividing the total direct cost of the subject by the number of pupils enrolled in that subject. (see Tables XXXI to XXXIV, Appendix B).

Division I

The estimated per pupil subject costs for Division I are presented in Table VI. The two highest costing subjects in all three grades in this division were Reading and Mathematics. The per pupil costs in Kindergarten, Grade One, and Grade Two of Reading were $20.07, $41.60, and $40.60 respectively; followed by per pupil costs of Mathematics $18.71, $29.66, and $28.04 respectively.

The lowest per pupil cost in Kindergarten was Social Studies ($4.54 per pupil) while in Grade One and Grade Two the least expensive subject was Physical Education ($7.99 and $6.24 per pupil respectively).

From Table XXXI, page 118, it is obvious that the factor contributing most to the variation from least expensive to more expensive per pupil subject costs in Division I is time of instruction per subject. Far more time was spent, in all cases, instructing Reading and Mathematics than any other subjects in each of the grades in Division I.

Division II

The estimated per pupil subject costs for Division II are presented in Table VII. The most expensive subject per pupil was Reading at $40.55 per pupil for Grade Three, $33.55 per pupil for Grade Four, and $34.93 per pupil for Grade Five. Mathematics had the second highest per pupil cost with $32.68 per pupil for Grade Three, $32.10 per pupil

TABLE VI

ESTIMATED PER PUPIL COSTS PER SUBJECT FOR DIVISION I IN THE SCHOOL DISTRICT: 1970-1971

Subject	Kindergarten		Grade One		Grade Two		Mean($) Division I
	Total Cost($)	Cost/ Pupil($)[a]	Total Cost($)	Cost/ Pupil($)	Total Cost($)	Cost/ Pupil($)	
Language	21,995.79	13.15	2,535.23	13.41	6,197.77	15.53	14.03
Printing and/or Writing	3,280.75	11.68	4,788.95	12.47	4,967.79	10.39	11.51
Reading	6,764.55	20.07	18,719.89	41.60	20,056.57	40.60	34.09
Spelling	-		-		5,225.21	14.72	-[b]
Phonics	477.90	10.62	949.90	26.37	2,192.61	17.13	10.04
Storytime	3,311.49	10.28	2,520.83	10.33	1,148.28	7.31	9.31
Social Studies	254.00	4.54	312.24	14.48	911.94	9.03	9.35
Mathematics	6,306.89	18.71	13,435.62	29.66	13,849.47	28.04	25.47
Earth Science	1,482.29	7.56	5,272.59	11.72	3,952.84	8.52	9.27
Physical Education	2,022.83	7.66	1,774.00	7.99	1,897.73	6.24	7.30

TABLE VI (continued)

Subject	Kindergarten Total Cost($)	Kindergarten Cost/ Pupil($)	Grade One Total Cost($)	Grade One Cost/ Pupil($)	Grade Two Total Cost($)	Grade Two Cost/ Pupil($)	Mean($) Div. I
Religious Education	2,314.18	11.40	5,959.42	14.36	5,493.80	11.14	12.30
Art	4,162.70	15.47	2,816.27	8.97	2,763.95	7.16	10.53
Music and/or Singing	4,821.94	17.47	3,578.50	9.89	4,160.17	11.24	12.87

[a]Cost per pupil figures represent an average cost of the subject for each pupil registered as taking that subject in the district. This applies in succeeding Tables VI to IX inclusive.

[b]When a subject is not common to all pupils in the Division, a mean per pupil cost has not been calculated.

TABLE VII

ESTIMATED PER PUPIL COSTS PER SUBJECT FOR DIVISION II IN THE SCHOOL DISTRICT: 1970-1971

Subject	Grade Three		Grade Four		Grade Five		Mean($)
	Total Cost($)	Cost/ Pupil($)	Total Cost($)	Cost/ Pupil($)	Total Cost($)	Cost/ Pupil($)	Div. II
Language	10,807.68	22.56	9,085.86	18.89	11,328.19	22.98	21.48
Printing and/or Writing	2,403.68	6.18	936.12	5.06	477.14	7.12	6.12
Reading	19,425.68	40.55	16,139.20	33.55	17,219.28	34.93	36.34
Spelling	6,537.53	16.06	7,113.82	15.88	6,219.98	12.62	14.85
Phonics	1,184.44	10.21	-		-		-
Storytime	1,723.91	10.20	183.48	5.56	436.80	0.89	5.55
Social Studies	681.26	6.19	-		-		-
Geography	-		7,383.92	15.35	6,953.69	14.10	-
History	-		-		4,511.90	13.88	-

TABLE VII (continued)

Subject	Grade Three Total Cost($)	Grade Three Cost/ Pupil($)	Grade Four Total Cost($)	Grade Four Cost/ Pupil($)	Grade Five Total Cost($)	Grade Five Cost/ Pupil($)	Mean($) Div. II
Mathematics	15,654.09	32.68	15,438.89	32.10	14,078.77	28.56	31.11
Health Science	4,328.87	9.84	5,226.58	11.59	6,544.79	13.28	11.57
Physical Education	2,012.63	8.87	1,360.50	7.09	1,534.50	9.13	8.36
Religious Education	5,850.78	12.21	6,304.71	13.11	7,286.32	14.78	13.37
Art	2,773.64	7.56	1,557.72	5.37	744.88	5.40	6.11
Music and/or Singing	2,438.46	9.06	1,793.58	6.55	1,880.92	7.58	7.73
French	-		-		1,936.05	9.18	-

for Grade Four, and $28.56 per pupil for Grade Five. The least expensive subject per pupil in each of Grade Three, Grade Four, and Grade Five were, respectively, Social Studies ($6.19 per pupil), Printing and/or Writing ($5.06 per pupil), and Storytime ($0.89 per pupil).

The three subjects having the lowest mean cost per pupil in Division II were Storytime, Printing and/or Writing, and Art. ($5.55 per pupil, $6.12 per pupil, and $6.11 per pupil respectively.) The mean costs per pupil of Reading and Mathematics were $36.34 per pupil and $31.11 per pupil respectively. The predominant factor resulting in this range of cost per pupil differences was the length of time spent on instruction in the subject. Also, in some cases (e.g. Printing and/or Writing, and Storytime) in addition to a short instructional time length there were limited enrolments in the subjects.

Division III

The estimated per pupil subject costs for Division III are presented in Table VIII. In this division, as in Division I and Division II, there was a significant range in subject per pupil costs as a result of (1) some subjects receiving more instructional time than others, and (2) differences in teachers' salaries. The former reason was the most significant determinant of subject costs.

The most expensive subject per pupil was Mathematics at $32.56 per pupil for Grade Six, $34.04 per pupil for Grade Seven, and $41.52 per pupil for Grade Eight. The mean cost per pupil in Division III for Mathematics was $36.04. The cost per pupil of Mathematics was followed closely by Literature (Reading in Grade Six) and Language. In Grade Six

TABLE VIII

ESTIMATED PER PUPIL COSTS PER SUBJECT FOR DIVISION III IN THE SCHOOL DISTRICT; 1970-1971

Subject	Grade Six		Grade Seven		Grade Eight		Mean($)
	Total Cost($)	Cost/ Pupil($)	Total Cost($)	Cost/ Pupil($)	Total Cost($)	Cost/ Pupil($)	Div. III
Reading	15,028.60	27.73	-		-		-
Language	12,102.82	22.33	16,189.91	31.02	11,985.17	27.55	26.97
Literature	-		15,731.86	30.14	13,376.71	30.75	-
Spelling	6,696.06	12.35	5,693.88	13.49	3,396.89	12.00	12.61
History	6,336.99	12.62	8,321.01	17.52	6,822.78	15.68	15.24
Geography	5,581.62	12.63	10,109.43	19.37	6,552.82	17.81	16.60
Mathematics	17,648.09	32.56	17,767.56	34.04	16,689.46	41.52	36.04
French	4,007.87	10.74	6,639.22	16.64	7,315.21	16.82	14.73

TABLE VIII (continued)

Subject	Grade Six Total Cost($)	Grade Six Cost/ Pupil($)	Grade Seven Total Cost($)	Grade Seven Cost/ Pupil($)	Grade Eight Total Cost($)	Grade Eight Cost/ Pupil($)	Mean($) Div. III
Health Science	7,244.30	14.18	-		-		-
General Science	-		11,059.02	21.19	8,322.09	19.13	-
Physical Education	1,537.17	6.89	1,379.22	6.90	1,781.54	11.49	8.43
Religious Education	7,107.39	13.11	7,505.65	14.38	6,431.89	14.79	14.09
Art	1,216.44	7.16	-		335.74	10.78	-
Music and/or singing	2,171.88	6.44	2,423.10	9.47	1,474.49	9.39	8.43

the cost per pupil of Reading was $27.73 and the cost per pupil of Language was $22.33. In Grade Seven and Grade Eight the cost per pupil of Language was $31.02 and $27.55 respectively, while the cost of Literature was $30.14 per pupil and $30.75 per pupil respectively.

The least expensive subject per pupil in Grade Six and Grade Eight was Music and/or Singing which cost $6.44 per pupil and $9.39 per pupil respectively. In Grade Seven the least expensive subject per pupil was Physical Education which cost $6.90 per pupil. In Division III the lowest mean costs per pupil were in Physical Education and Music and/or Singing, both costing $8.43 per pupil.

Division IV

The estimated per pupil subject costs for Division IV are presented in Table IX. In this division costs comparisons become difficult since a wide variety of subjects were offered. This was compounded by the fact that two curricular programs were offered. For example, in Literature, Language, and Mathematics, pupils could elect to enrol in either the General or Academic program. In Social Studies and in Sciences a pupil could be selective, also.

In Grade Nine, subject costs per pupil ranged from a high of $61.33 for Literature-General to a low of $3.77 for Music and/or Singing. In Grade Ten the most expensive subject per pupil was Mathematics-General which cost $144.76 per pupil, while the least expensive subject was Music and/or Singing which cost $4.22 per pupil. Similarly, in Grade Eleven the highest cost per pupil was for Mathematics-General which cost $208.09, and the lowest costing subject was Music and/or

TABLE IX

ESTIMATED PER PUPIL COST PER SUBJECT FOR DIVISION IV IN THE SCHOOL DISTRICT: 1970-1971

Subject	Grade Nine		Grade Ten		Grade Eleven		Mean($)
	Total Cost($)	Cost/ Pupil($)	Total Cost($)	Cost/ Pupil($)	Total (ost($)	Cost/ Pupil($)	Div. IV
Literature-General	1,226.60	61.33	-		1,217.76	76.11	-
Literature-Academic	14,953.73	33.23	10,081.64	32.01	14,563.29	46.53	37.26
Language-General	1,038.00	51.90	-		666.56	41.66	-
Language-Academic	13,657.73	30.35	9,277.85	29.45	11,563.23	37.30	32.37
History	15,537.11	33.06	9,917.72	31.59	12,545.98	39.83	34.83
Geography	3,581.03	20.58	3,017.95	25.58	2,508.59	30.97	25.71
Geography-General	-		-		937.76	58.61	-
Economics	-		-		1,630.12	44.08	-
French	13,823.07	30.86	8,617.99	30.24	10,723.28	38.03	33.04
Physical Education	4,465.73	13.57	2,489.40	11.80	2,582.98	10.85	12.07
Religious Education	13,936.03	29.78	7,082.57	22.20	11,983.79	35.04	29.01

TABLE IX (continued)

Subject	Grade Nine Total Cost($)	Grade Nine Cost/ Pupil($)	Grade Ten Total Cost($)	Grade Ten Cost/ Pupil($)	Grade Eleven Total Cost($)	Grade Eleven Cost/ Pupil($)	Mean($) Div. IV
Mathematics-General	748.20	39.21	3,329.48	144.76	3,329.44	208.09	130.69
Algebra	16,443.46	36.54	10,968.96	37.06	13,646.64	45.34	39.65
Geometry	11,800.01	26.22	9,767.31	33.00	14,467.01	47.75	35.66
General Science	16,404.22	34.90	-		-		-
Earth Science	-		805.06	20.13	1,585.17	44.03	-
Physical Science	-		1,168.17	50.79	1,168.32	73.02	-
Biology	-		7,381.00	39.26	6,982.68	35.63	-
Chemistry	-		2,671.04	39.28	4,002.18	51.31	-
Music and/or Singing	595.75	3.77	595.70	4.22	118.61	1.72	3.24

Singing ($1.72). Differences in instruction time, class enrolments, and teachers' salaries, reflect very significant variances in per pupil subject costs in Division IV.

V. DIRECT INSTRUCTIONAL PER PUPIL COSTS PER SUBJECT CLUSTER BY GRADE DIVISION

In the previous section of this chapter it was not always accurate to make direct comparisons of pupil costs per subject since enrolments per subjects and subjects taken by pupils differed depending on the grade and/or school involved. For example, in Division I and Division II, per pupil subjects costs differed because of timetabling. The amount of time devoted to a particular subject in the Language Arts Cluster, for example, was not always reported to be the same by all teachers. To correct possible discrepancies and thus make total costs more meaningful, all the subjects per pupil costs were aggregated into clusters, that is, all subjects with a common feature were grouped under one heading. The term 'subject cluster' refers to this process of grouping subjects. For example, General Science IX, Earth Science X and XI, Physical Science X and XI, Biology X and XI, and Chemistry X and XI are all concerned with the teaching of Science in Division IV and are thus grouped together under the heading Science CLuster. Subject Clusters utilized in this study are found in Figures 4 to 7, pages 113-116; namely, Language Arts, Social Studies, Mathematics, Science, Physical Education, Religious Education, Fine Arts, and Modern Languages.

To indicate the relative costs of the subject clusters, the total direct instructional cost for each cluster was expressed in terms

of the enrolment in all subjects in the cluster, and in terms of the number of pupils in the division.

Division I

The per pupil costs by subject cluster for Division I are presented in Table X. The most expensive cluster was Language Arts and the least expensive cluster was Social Studies. Language Arts cost a total of $85,333.51 or a cost of $66.61 per pupil-enrolled. Mathematics had the highest cost per pupil-subject ($26.22). Social Studies had the lowest total cost ($1,478.18) and the lowest cost per pupil-enrolled ($1.15).

Since a subject cluster with more subjects than another cluster, had more instructional time spent on it, the result is a higher per pupil-enrolled cost. Thus the number of subjects in a cluster, and the amount of instructional time resulting, explains the wide range of costs among subject clusters.

Division II

The per pupil costs by subject cluster for Division II are presented in Table XI. In Division II Physical Education was the least expensive subject cluster both in total cost ($4,907.63) and per pupil-enrolled cost ($3.38). As was the case in Division I, Language Arts was the most expensive subject cluster with a total cost of $111,222.79 and a per pupil-enrolled cost of $76.55. Mathematics was the next highest costing cluster with a total cost of $45,171.75 and a per pupil-enrolled cost of $31.09. Also, Mathematics had the highest cost per pupil-subject at $31.09.

TABLE X

ESTIMATED DIRECT INSTRUCTIONAL PER PUPIL COSTS
BY SUBJECT CLUSTER FOR DIVISION I IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost ($)	Cost/ Pupil-Subject($)[1]	Cost/ Pupil-Enrolled($)[2]
Language Arts	85,333.51	18.37	66.61
Social Studies	1,478.18	7.39	1.15
Mathematics	33,591.98	26.22	26.22
Science	10,707.72	9.65	8.36
Physical Education	5,694.56	7.21	4.45
Religious Education	13,767.40	12.39	10.75
Fine Arts	22,303.53	11.28	17.41

[1]Cost per pupil-subject figures represent an average cost for total registrations in all subjects in the subject cluster. This applies in succeeding Tables XI - XIV inclusive.

[2]Cost per pupil-enrolled figures represent the average cost per pupil registered in the grade division in the district. This applies in succeeding Tables XI - XIV inclusive.

TABLE XI

ESTIMATED DIRECT INSTRUCTIONAL PER PUPIL COSTS
BY SUBJECT CLUSTER FOR DIVISION II IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost ($)	Cost/ Pupil-Subject($)	Cost/ Pupil-Enrolled($)
Language Arts	111,222.79	22.48	76.55
Social Studies	19,530.77	13.86	13.44
Mathematics	45,171.75	31.09	31.09
Science	16,100.24	11.63	11.08
Physical Education	4,907.63	8.36	3.38
Religious Education	19,441.81	13.38	15.38
Fine Arts	11,189.20	7.05	7.70
Modern Language	1,936.05	9.18	3.93

The total direct instructional cost for all subject clusters, with the exception of Physical Education, was greater for Division II than Division I. This upward trend in costs in Division II was mainly due to longer instructional time periods being allocated to the clusters, that is, in Division I less time was devoted to teaching in these clusters and thus the direct instructional costs were lower.

Division III

The per pupil costs by subject cluster for Division III are presented in Table XII. Again, due to varying lengths of time given to instruction in specific subject clusters and differing enrolments in subjects in the clusters, the costs vary among subject clusters in Division III. Language Arts remained the most expensive cluster, with a total cost of $100,201.90 and a cost per pupil-enrolled of $65.97. Physical Education remained the least expensive cluster with a total cost of $4,697.93 and a cost per pupil-enrolled of $3.09. The cluster with the highest cost per pupil-subject was Mathematics with a total cost of $52,105.11 and a cost per pupil-subject of $35.54.

The total instructional cost for Division III was higher than that for Division II and Division I. The main contributing factor is that teacher qualifications, and thus salaries, were higher in this Division. (see Table XXXVII, page 151).

Division IV

The per pupil cost by subject cluster for Division IV are presented in Table XIII. The most expensive cluster in Division IV was Mathematics with a total cost of $84,536.51 and a cost per pupil-enrolled

TABLE XII

ESTIMATED DIRECT INSTRUCTIONAL PER PUPIL COSTS
BY SUBJECT CLUSTER FOR DIVISION III IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost ($)	Cost/ Pupil-Subject($)	Cost/ Pupil-Enrolled($)
Language Arts	100,201.90	23.60	65.97
Social Studies	43,724.65	15.91	28.79
Mathematics	52,105.11	35.54	34.30
Science	26,625.41	18.14	17.53
Physical Education	4,697.93	8.13	3.09
Religious Education	21,044.93	14.04	13.85
Fine Arts	7,621.65	10.16	5.02
Modern Language	10,647.09	8.82	7.01
Special Education[1]	8,398.70	419.94	-

[1]Non-graded Special Education subjects are not common to all pupils in the division, therefore no cost per pupil-subject has been calculated.

TABLE XIII

ESTIMATED DIRECT INSTRUCTIONAL PER PUPIL COSTS
BY SUBJECT CLUSTER FOR DIVISION IV IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost ($)	Cost/ Pupil-Subject($)	Cost/ Pupil-Enrolled($)
Language Arts	78,246.39	35.17	69.18
Social Studies	49,676.26	32.57	43.92
Mathematics	84,536.51	39.23	74.74
Science	42,167.84	37.82	37.28
Physical Education	9,538.11	12.26	8.43
Religious Education	33,002.39	29.23	29.18
Fine Arts	1,310.06	3.56	1.16
Modern Language	33,164.34	32.67	29.32

cost of $74.74. Mathematics also had the highest cost per pupil-subject at $39.23. The least expensive cluster was Fine Arts with a total cost of $1,310.06 and a cost per pupil-enrolled of $1.16.

With the exception of the Fine Arts Cluster, all cluster costs were higher in Division IV than in Division III.

A summary of subject cluster costs for Divisions I, II, III, and IV is contained in Table XIV.

VI. PER PUPIL COSTS BY VARIOUS PROGRAMS

This section deals with the per pupil costs by program routes. The programs from Grades Kindergarten to Eight are merely grade programs, that is, each grade represents the one possible program because each pupil in the specific grade must study each given subject in that grade. There were minor variations among schools in the district, but essentially each grade from Kindergarten to Grade Eight inclusive, is comprised of one program. In Division IV, however, two basic programs were distinguished for each of Grades Nine, Ten, and Eleven; namely, General Diploma route, and Academic Matriculation route.

Division I

Tables XV, XVI, and XVII present the costs of educating a pupil in each of the grades in Division I. The mean cost per pupil in this division was $232.13. Kindergarten was the least expensive grade with a per pupil cost of $199.21, and Grade Two was the most expensive grade with a per pupil cost of $252.31. Since there was little difference in the indirect and implementary costs among these grades (a difference of only $3.06), and since the enrolment per grade increases from

TABLE XIV

ESTIMATED SUBJECT CLUSTER COSTS FOR DIVISION I, II, III, AND IV IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Div.	Total Direct Instructional Cost($)	Cost/ Pupil-Subject($)	Cost/ Pupil-Enrolled($)
Language Arts	I	85,333.51	18.37	66.61
	II	111,222.79	22.48	76.55
	III	100,201.90	23.60	65.97
	IV	78,246.39	35.17	69.18
Total		275,004.59		
Social Studies	I	1,478.18	7.39	1.15
	II	19,530.77	13.86	13.44
	III	43,724.65	15.91	28.79
	IV	49,676.26	32.57	43.92
Total		114,409.86		
Mathematics	I	33,591.98	26.22	26.22
	II	45,171.75	31.09	31.09
	III	52,105.11	35.54	34.30
	IV	84,536.51	39.23	74.74
Total		215,405.35		
Science	I	10,707.72	9.65	8.36
	II	16,100.24	11.63	11.08
	III	26,625.41	18.14	17.53
	IV	42,167.21	37.82	37.28
Total		95,601.21		
Physical Education	I	5,694.56	7.21	4.45
	II	4,907.63	8.36	3.38
	III	4,697.93	8.13	3.09
	IV	9,538.11	12.26	8.43
Total		24,838.23		

TABLE XIV (continued)

Subject Cluster	Div.	Total Direct Instructional Cost($)	Cost/ Pupil-Subject($)	Cost/ Pupil-Enrolled($)
Religious Education	I	13,767.40	12.39	10.75
	II	19,441.81	13.38	15.38
	III	21,044.93	14.04	13.85
	IV	33,002.39	29.23	29.18
Total		87,256.53		
Fine Arts	I	22,303.53	11.28	17.41
	II	11,189.20	7.05	7.70
	III	7,621.65	10.16	5.02
	IV	1,310.06	3.56	1.16
Total		42,424.44		
Modern Language	I	-		
	II	1,936.05	9.18	3.93
	III	10,647.09	8.82	7.01
	IV	33,164.34	32.67	29.32
Total		45,747.48		
Special Education[1]		8,398.70	419.94	-

[1]Non-graded Special Education is not common to all pupils in any division, therefore no cost per pupil-subject figure has been calculated.

TABLE XV

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR KINDERGARTEN IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	16,030.48	47.57
Social Studies	254.00	0.75
Mathematics	6,306.89	18.71
Science	1,482.29	4.40
Physical Education	2,022.83	6.00
Religious Education	2,314.18	6.87
Fine Arts	4,162.70	12.35
Total Inst. Costs	32,573.37	96.66
Others[1]		102.55
Total		199.21

[1]'Others' per pupil cost is obtained from Table XXXVI, page 150. This applies in succeeding Tables XVI to XXIX inclusive.

TABLE XVI

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE ONE IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	29,514.80	65.59
Social Studies	312.24	0.69
Mathematics	13,435.59	29.86
Science	5,272.59	11.72
Physical Education	1,774.00	3.94
Religious Education	5,959.42	13.24
Fine Arts	6,394.77	14.21
Total Inst. Costs	62,663.44	139.25
Others		105.61
Total		244.86

TABLE XVII

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE TWO IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	39,788.23	80.54
Social Studies	911.94	1.85
Mathematics	13,849.47	28.04
Science	3,952.84	8.00
Physical Education	1,897.73	3.84
Religious Education	5,493.80	11.12
Fine Arts	6,924.12	14.02
Total Instructional Cost	72,818.13	147.41
Others		104.90
Total		252.31

Kindergarten to Grade One and from Grade One to Grade Two, cost differences among the grades in this division can be attributed to differences in direct instructional cost resulting from differences in (1)length of instructional time, and (2) teachers' salaries.

Division II

Tables XVIII, XIX, and XX present the costs of educating a pupil in each of Grades Three, Four, and Five respectively. The mean cost per pupil in this division was $262.43, $30.30 per pupil higher than that for Division I. In Division II the cost per pupil ranged from $255.33 for Grade Four to $263.84 for Grade Five. Again, total instructional costs differences explain this range in cost per pupil since there was very little difference in the indirect and implementary costs per pupil per grade.

Division III

Tables XXI, XXII, and XXIII present the costs of educating a pupil in the grades of Division III. The mean cost per pupil per grade in this division was $309.92, higher than that of either Division I or Division II. In this division the cost per pupil for Grade Six was $265.30; for Grade Seven, $336.10; and for Grade Eight, $328.35.

Division IV

Tables XXIV to XXIX present the cost per pupil in each of Grade Nine, Grade Ten, and Grade Eleven. Table XXX presents a summary of per pupil costs of Division IV. It was difficult to determine grade costs in Division IV since there were (1) two program routes distinguishable, (2) optional subjects in each grade, and (3) variations in subject

TABLE XVIII

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE THREE IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Instructional Costs($)	Cost/ Pupil($)
Language Arts	42,082.92	87.86
Social Studies	681.26	1.42
Mathematics	15,654.09	32.68
Science	4,328.87	9.04
Physical Education	2,012.63	4.20
Religious Education	5,850.78	12.21
Fine Arts	5,212.10	10.88
Modern Language	-	
Total Instructional Cost	75,822.65	158.29
Others		104.84
Total		263.13

TABLE XIX

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE FOUR IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	33,458.48	69.56
Social Studies	7,383.92	15.35
Mathematics	15,438.89	32.10
Science	5,226.58	10.87
Physical Education	1,360.50	2.83
Religious Education	6,351.30	13.11
Fine Arts	3,351.30	6.97
Modern Language	-	
Total Instructional Cost	72,524.38	150.79
Others		104.54
Total		255.33

TABLE XX

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE FIVE IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	35,681.39	72.38
Social Studies	11,465.59	23.26
Mathematics	14,078.77	28.56
Science	6,544.79	13.28
Physical Education	1,534.50	3.11
Religious Education	7,286.32	14.78
Fine Arts	2,625.80	5.33
Modern Language	1,936.05	3.93
Total Instructional Cost	81,153.21	164.63
Others		104.21
Total		268.84

TABLE XXI

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE SIX IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	33,827.48	62.41
Social Studies	11,918.61	21.99
Mathematics	17,648.09	32.56
Science	7,244.30	13.37
Physical Education	1,537.17	2.84
Religious Education	7,107.39	13.11
Fine Arts	3,388.32	6.25
Modern Language	4,007.87	7.39
Total Instructional Cost	86,679.23	159.92
Others		105.38
Total		265.30

TABLE XXII

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE SEVEN IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	37,615.65	72.06
Social Studies	18,430.44	35.31
Mathematics	17,767.56	34.04
Science	11,059.02	21.19
Physical Education	1,379.32	2.64
Religious Education	7,505.65	14.38
Fine Arts	2,423.10	4.64
Modern Language	6,639.22	12.72
Total Instructional Cost	102,819.96	196.98
Others		139.12
Total		336.10

TABLE XXIII

ESTIMATED PER PUPIL COSTS BY SUBJECT CLUSTER
FOR GRADE EIGHT IN THE SCHOOL DISTRICT: 1970-1971

Subject Cluster	Total Direct Instructional Cost($)	Cost/ Pupil($)
Language Arts	28,758.77	66.11
Social Studies	13,375.60	30.75
Mathematics	16,689.46	38.37
Science	8,322.09	19.13
Physical Education	1,781.54	4.10
Religious Education	6,431.89	14.79
Fine Arts	1,810.23	4.16
Modern Language	7,315.21	16.82
Total Instructional Cost	84,484.79	194.23
Others		134.12
Total		328.35

TABLE XXIV

MINIMUM-MAXIMUM ESTIMATED GRADE NINE GENERAL PROGRAM PER PUPIL COSTS IN THE SCHOOL DISTRICT: 1970-1971

Subjects	Pupil Costs($) Mininmum Cost Program	Maximum Cost Program
Core Subjects:		
Literature	61.33	61.33
Language	51.90	51.90
Mathematics	39.21	39.21
Science	34.90	34.90
At least one of:		
History		33.06
Geography	20.58	20.58
Options:		
French	30.86	30.86
Physical Education[a]		13.57
Religious Education[a]	29.78	29.78
Music and/or Singing[a]		3.77
Instructional Cost	268.56	318.96
Others	214.26	214.26
Total	482.82	533.22

[a]Non-credit subject.

TABLE XXV

MINIMUM-MAXIMUM ESTIMATED GRADE NINE ACADEMIC PROGRAM PER PUPIL COSTS IN THE SCHOOL DISTRICT: 1970-1971

Subjects	Pupil Costs($)	
	Minimum Cost Program	Maximum Cost Program
Core Subjects:		
Literature	33.23	33.23
Language	30.35	30.35
Algebra	36.54	36.54
Geometry	26.22	26.22
Science	34.90	34.90
At least one of:		
History		33.06
Geography	20.58	
Options:		
French	30.86	30.86
Physical Education[a]		13.57
Religious Education[a]	29.78	29.78
Music and/or Singing[a]		3.77
Instructional Cost	242.46	272.28
Others	214.26	214.26
Total	456.72	486.54

[a]Non-credit subject.

TABLE XXVI

MINIMUM-MAXIMUM ESTIMATED GRADE TEN GENERAL PROGRAM PER PUPIL COSTS IN THE SCHOOL DISTRICT: 1970-1971

Subjects	Pupil Costs($) Minimum Cost Program	Maximum Cost Program
Core Subjects:		
Literature	32.01	32.01
Language	29.45	29.45
Mathematics	144.76	144.76
Physical Science	50.79	50.79
History	31.59	31.59
Geography	25.58	25.58
Options:		
Physical Education[a]	11.80	11.80
French		30.24
Religious Education[a]	22.20	22.20
Music and/or Singing[a]		4.22
Instructional Cost	348.18	382.64
Others	220.81	220.81
Total	568.99	603.45

[a]Non-credit subject.

TABLE XXVII

MINIMUM-MAXIMUM ESTIMATED GRADE TEN ACADEMIC PROGRAM PER PUPIL COSTS IN THE SCHOOL DISTRICT: 1970-1971

Subjects	Pupil Costs($) Minimum Cost Program	Maximum Cost Program
Core Subjects:		
Literature	32.01	32.01
Language	29.45	29.45
Algebra	37.06	37.06
Geometry	33.00	33.00
Either:		
Earth Science	20.13	
Or:		
Biology		39.26
Chemistry		39.28
Options:		
Physical Education[a]		11.80
French	30.24	30.24
Religious Education[a]	22.20	22.20
Music and/or Singing[a]		1.72
Instructional Cost	204.09	276.02
Others	220.81	220.81
Total	424.90	496.83

[a]Non-credit subject.

TABLE XXVIII

MINIMUM-MAXIMUM ESTIMATED GRADE ELEVEN GENERAL PROGRAM PER PUPIL COSTS IN THE SCHOOL DISTRICT: 1970-1971

Subjects	Pupil Costs($)	
	Minimum Cost Program	Maximum Cost Program
Core Subjects:		
Literature	76.11	76.11
Language	41.66	41.66
Mathematics	208.09	208.09
Physical Science	73.02	73.02
At least one of:		
History	39.83	
Geography		58.61
Economics	44.08	44.08
Options:		
Physical Education[a]		10.85
French		38.03
Religious Education[a]	35.04	35.04
Music and/or Singing		1.72
Instructional Cost	517.83	587.21
Others	222.14	222.14
Total	739.97	809.35

[a]Non-credit subject.

TABLE XXIX

MINIMUM-MAXIMUM ESTIMATED GRADE ELEVEN ACADEMIC PROGRAM PER PUPIL COSTS IN THE SCHOOL DISTRICT: 1970-1971

Subjects	Pupil Costs($) Minimum Cost Program	Maximum Cost Program
Core Subjects:		
Literature	46.53	46.53
Language	37.30	37.30
Algebra	45.34	45.34
Geometry	47.75	47.75
Either:		
Earth Science	44.03	
Or:		
Biology		35.63
Chemistry		51.31
At Least one of:		
History		39.83
Geography	30.97	
Options:		
Physical Education[a]		10.85
French		38.03
Religious Education[a]	35.04	35.04
Music and/or Singing[a]		1.72
Instructional Cost	286.96	286.96
Others	222.14	222.14
Total	509.10	611.47

[a]Non-credit subject.

TABLE XXX

MINIMUM-MAXIMUM ESTIMATED PER PUPIL COSTS
OF THE GENERAL AND ACADEMIC PROGRAMS IN DIVISION IV
IN THE SCHOOL DISTRICT: 1970-1971

Grade	Program Route[1]	Pupil Costs($)[2] Minimum Program	Maximum Program
Nine	G	482.82	533.22
	A	456.72	486.54
Ten	G	568.99	603.45
	A	424.90	496.83
Eleven	G	739.97	809.35
	A	509.10	611.47
Totals	G	1,791.78	1,946.02
	A	1,390.72	1,594.84

[1]The General Diploma route is denoted by 'G' and the Academic Matriculation route, by 'A'.

[2]Pupil Costs figures include indirect and implementary costs taken from Table XXXV, page 148.

offerings among schools. However, on the advice of the district superintendent a minimum cost program and a maximum cost program was outlined for each grade in this division. These minimum-maximum programs parallel the General and Academic programs but also deal with subject options.

Two things are evident from the cost figures derived for Division IV: (1) the cost per pupil in Division IV was the highest per pupil cost by division in the district, and (2) there was a significant difference in per pupil cost between the General Diploma route and the Academic Matriculation route.

The minimum and maximum mean costs per pupil on the General Diploma route were $597.26 and $648.67 respectively. The minimum and maximum mean costs per pupil on the Academic Matriculation route were $463.57 and $531.61 respectively. The two program routes showed a total difference of $401.06 in minimum costs. Minimum costs ranged from $1791.78 per pupil on the General Diploma route to $1390.72 per pupil on the Academic Matriculation route. The maximum costs differed by $351.18, ranging from $1594.84 fro the Academic Matriculation route to $1946.02 for the General Diploma route.

VII. SUMMARY

This chapter presented the various pupil costs analyzed in this study relative to the six sub-problems as outlined in Chapter I: (1) the total educational costs of the school district, (2) the district per pupil costs, (3) the per pupil costs in each school, (4) the per pupil costs of each subject, (5) the per pupil cost of each subject

cluster by grade division, and (6) the per pupil cost of each grade level or program route.

Some of the determinants of these costs and differences in these costs were also discussed. It was found that there were significant variations in per pupil costs among subjects, subject clusters, program routes, and grade divisions; resulting from differences in the instructional time, varying pupil enrolments, and differences in teachers' training and experience and thus differences in salaries.

CHAPTER VI

SUMMARY, FINDINGS AND CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

I. INTRODUCTION

The purpose of this chapter is fourfold. Firstly, this chapter presents a summary of the study; secondly, it summarizes the major findings reported in Chapter V and presents general conclusions based upon the findings; thirdly, it presents implications and conclusions which emerge from this study; and fourthly, suggestions for further research and study are offered.

II. SUMMARY

The main problem of this study was to conduct a unit cost analysis of the operational expenditures of the selected school district for the school year 1970-1971.

Several sub-problems were investigated by determining and analyzing educational costs on a per pupil basis in (1) the district as a whole, (2) each of the schools, (3) each of the subjects taught, (4) each subject cluster, and (5) each grade level or program route.

Sources of data included the financial ledgers and other records in the District Central Office, the Faculty Workload Survey questionnaire, and interviews of primary sources. All expenditure figures were prorated on the most equitable bases possible to schools, subjects and subject clusters, and ultimately, into per pupil costs.

III. FINDINGS AND CONCLUSIONS

District Costs

As defined in this study, the total educational expenditure in the school district amounted to $1,763,164.28 which averaged a per pupil cost of $327.48.

Teaching in the district proved to be labour intensive with direct instructional salaries [Series 200(a)] amounting to $1,029,238.09 and thus accounting for 58.4 per cent of the total district expenditures, the highest single expenditure for 1970-1971.

The second most expensive category was pupil transportation services [Series 300], accounting for $298,708.00 or 16.9 per cent of the total costs. The extent of centralization in the district, resulting in long distances being travelled coupled with a relatively large number of buses, explains this cost.

Together the expenditure classifications: administration [Series 100], plant operation [Series 400], plant maintenance [Series 500], and fixed charges [Series 600] accounted for 14.5 per cent of the total district expenditure.

Total Costs By School

The total cost per school ranged from $33,085.31 in School J to $303,395.92 in School A. This range in total expenditures per school cannot be attributed to any one factor, but rather to a number of factors, the most obvious of which are differences in (1) the number of teachers employed and their training and experience, (2) the number of pupils being transported and distances travelled, and (3) the physical size of the school. Regarding the two former factors, data show that direct

instructional costs [Series 200(a)] and pupil transportation services [Series 300] are the most expensive expenditure classifications in the district. Regarding the latter factor, as the size of the school plant increased so did the costs of plant operations [Series 400] and plant maintenance [Series 500] in general. Within these expenditure classifications there existed significant cost variations.

Costs Per Pupil By School

The average estimated per pupil cost for the district was $327.38. The range in per pupil cost by school was from $185.53 for School D to $591.49 for School H. These differences resulted from significant variations among schools in expenditures in particular expenditure categories. For example, the range in direct instructional costs [Series 200(a)] was from a low of $121.41 per pupil for School H to $300.16 per pupil for School A. Variations in the number of teachers, and their training and experience, which resulted in differences in salaries, was the main reason for this.

The range in per pupil costs by school for transportation [Series 300], where an expenditure was made in this category, was from a low of $4.84 for School E to a high of $180.20 for School H. The number of miles travelled, the number of buses being used, and the road surface condition explain variations in this expenditure category.

Per Pupil Costs Per Subject By Grade Division

It was found that per pupil costs per subjects varied greatly. In Division I and Division II the most expensive subject per pupil was Reading, with a mean cost per pupil of $34.09 and $36.34 respectively.

The least expensive subject in Division I was Physical Education with a mean cost per pupil of $7.30. The least expensive subject in Division II was Storytime with a mean cost per pupil of $5.55.

The most expensive subject in Division III was Mathematics with a mean cost per pupil of $36.04. The least expensive subjects were Physical Education and Music and/or Singing, both with a mean per pupil cost of $8.43.

In Division IV, the least expensive subjects were Physical Education and Music and/or Singing, with a mean per pupil cost of $12.07 and $3.24 respectively. The introduction of optional subjects in Division IV made it difficult to compare costs in this Division; however, it appears that subjects designated as 'General' tended to be more expensive. In Grade Nine the most expensive subject was Literature-General ($61.33 per pupil). In Grade Ten and Eleven the most expensive subject was Mathematics-General ($144.76 and $208.09 per pupil respectively).

Cost differences in per pupil costs per subject by Division were attributed to (1) pupil enrolments in each subject, (2) instructional time per subject, and (3) teachers' salaries as determined by experience and training.

Per Pupil Costs Per Subject Cluster

Determining per pupil costs per subject cluster proved to be beneficial in all divisions. With the exception of the Fine Arts cluster it was found that costs per pupil-subject by subject cluster increased consecutively from Division I through to Division IV inclusive. The predominant determinants of differences in costs were enrolments

and instructional time allocated to subject clusters.

In Divisions I, II, and III the Language Arts cluster had the highest subject cluster cost. In Division IV the Mathematics cluster had the highest subject cluster cost. Physical Education and Fine Arts clusters had the lowest subject cluster costs in all divisions.

Per Pupil Costs Per Program Route

Subject cluster costs for each grade or program route were used to determine grade and program costs. It was found that the costs per pupil for Divisions I and II for each grade ranged from a low of $199.21 for Kindergarten to a high of $268.84 for Grade Five. Costs differences were primarily a function of varying teachers' salaries as reflected in Series 200(a). Indirect and implementary costs per grade varied little, from $102.55 to $105.61 per pupil.

In Division III the mean cost per pupil per grade was higher than that of Division I and Division II. The lowest cost per pupil was for Grade Six ($265.30) and the highest cost per pupil was for Grade Seven ($336.10). The cost per pupil for Grade Eight was $328.35.

With regard to Division IV,the introduction of optional subjects made possible the costing of two program routes; namely, General Diploma route and Academic Matriculation route. In each of Grades Nine, Ten, and Eleven, the General Diploma route was found to be more expensive. This was mainly the result of low subject enrolments in the General route. In Division IV it was found that the Academic Matriculation route was significantly lower in per pupil cost than the alternate General Diploma route.

IV. IMPLICATIONS AND RECOMMENDATIONS

The purpose of this section is to outline the implications and recommendations of this study. Based on the need, as pointed up by this study, for further uses and extentions of cost analysis, the primary recommendation is that school districts should adopt a standardized accounting system that would facilitate the execution of annual cost analyses. A cost analysis for one year and for one school district is limited in its usefulness in making accurate projections of future expenditures or curricular changes. It is further recommended, then, that longitudinal cost analyses be conducted on a provincial scale but only after a Performance-based accounting system, as suggested above, is adopted.

This study clearly illustrated that the use of subject clusters in analyzing educational costs was of benefit in all Divisions. The method of clustering subjects under a common heading provided a clear indication of the emphasis given, in terms of expenditure, to that segment of the curricular program. This information could be made useful in contemplating curricular changes such as combining related subjects, adding related subjects, decreasing or increasing related subjects' enrolments, et cetera. Thus it is recommended that subject clusters be employed when costing either a district's or a school's program.

This study found that there were priorities given to subjects and subject clusters in the District. For example, Physical Education and Music and/or Singing were relatively inexpensive, while Language Arts and Mathematics were relatively expensive. Therefore, a review of existing priorities among curricular areas is recommended. Is there social justification for certain subjects to cost more than others?

There are many implications of this study which raise many questions: Is there need to change the priority of spending in the various subject areas or expenditure classifications? Will cost analyses distort the decision-making process in education so that emphasis is given more to inputs rather than to outputs? Will "non-measurable" benefits of education receive due attention, for example, learning for leisure? Will school administrators and teachers become more cognizant of the problems of resource allocation in education? Will business administrators become more efficient? Will the quest for accountability, measurability, and rationality in education have a positive effect? These are only a few of the implications of adopting unit cost analyses of educational expenditures.

V. SUGGESTIONS FOR FURTHER RESEARCH

This study was limited in that it was concerned only with the analysis of the educational per pupil costs in one school district and for one school year. Many cost analyses, both in similar and dissililar districts, need to be undertaken before any significant and accurate inferences can be made and trends predicted in resource allocations to education. Also, after methodologies are standardized and future analyses are simplified to permit their annual execution, cost analyses should be conducted on a longitudinal basis.

This study was restricted to the operating expenditures of the district. Subsequent research should subject to analysis all costs reported by the district and not be limited to current operational costs. This will require the development of an adequate and equitable amortization methodology to be applied to debt charges and capital outlay.

Proration of expenditures and per unit costs were calculated in this study by means of a calculator. There is a need for the development of a computer program that will handle both direct, and indirect and implementary data. This could be done after an initial survey of the data needed for cost analysis, but prior to its collection.

There is probably a maximum number of pupils that should be enrolled in a subject, program or school to obtain optimal operating efficiency and results. There are a number of situational factors or variables such as the qualifications of teachers, size of school, socio-economic background of the learner, the subject being taught, et cetera which probably control the optimal returns for expenditures. Provision should be made for control of these variables at some phase of unit costing so that a more valid assessment can be made of their effects. This could be of benefit in assessing the adequacy of the existing provincial Foundation Program of grants to school districts.

There is a need for incorporating into unit cost analyses a more sophisticated measure of output. The measurement of educational output as just the completion of a school year is, to the least, crude. A more sophisticated means of measuring output will enable the study of educational costs relative to the quality or benefit derived.

BIBLIOGRAPHY

BIBLIOGRAPHY

Alberta, Department of Education. Newsletter PPBES I (January-February, 1971).

Atherton, P.J. "Alberta Junior College Cost Studies: Number 1 Mount Royal Junior College," Research in Post Secondary Education. Edmonton, Alberta: Provincial Board of Post Secondary Education, 1968.

Benson, C.S. Perspectives On the Economics of Education. Boston: Houghton Mifflin Company, 1963.

_____ The Economics of Public Education. Boston: Houghton Mifflin Company, 1961.

Benson, Ralph. "Planning-Programming-Budgeting: An Educational Application," The N.T.A. Journal. LXII (April, 1971), 38-42.

Brammer, L.H. "A Technique for the Study of Unit Costs of Higher Education in Colleges for Teacher Education," Dissertation Abstracts. XV (1955), 363-364.

Brown, Wilfred J. Education Finance in Canada. Ottawa: Canadian Teachers' Federation, 1969.

Burke, A.J. Financing Public Schools in the United States. New York: Harper and Brothers, 1957.

Burkhead, Jesse. Input and Output in Large-City High Schools. New York: Syracuse University Press, 1967.

_____ Public School Finance: Economics and Politics. Worcester: Hefferman Press, 1964.

Cage, Bobby Nyle. "Cost Analysis of Selected Educational Programs in Area Schools of Iowa." Unpublished Doctoral Thesis, Iowa State University, 1968.

Canada, Dominion Bureau of Statistics, Education Department. A Manual of Accounting for School Boards. Catalogue No. 12-528. Ottawa: Queen's Printer, 1966.

Canada, Treasury Board. Financial Management. Ottawa: Queen's Printer, 1966.

Chamberlain, Gordon Lorin. "A Program Budget for Education." Unpublished Doctoral Thesis, Standford University, 1967.

Constance, Clifford L. "Forms for Gathering Data on Teaching Loads," The Journal of Experimental Education. XXXI (December, 1962), 119-120.

Duke, William Richard. "A Cost Analysis of Selected Schools in an Urban School System." Unpublished Doctoral Thesis, The University of Alberta, Edmonton, 1970.

Eikman, E. "A Quicky Cost Study," College and University Business. XXX (March, 1961), 40-41.

Elmore, W.E. "Cost Accounting," College and University Business. XIV (February, 1953), 45-48.

Evans, J.M. "Total Costs of Educational Programs," College and University Business. XVII (September, 1954), 41-45.

Fowlkes, J.G., and A.L. Hansen. "Business Management Accounting, Auditing and Reporting," Problems and Issues in Public School Finance. Edited by R.L. Johns and E.L. Morphet. New York: National Conference of Professors of Educational Administration, 1952.

Gauerke, W.E., and T.R. Childress, (eds.). Theory and Practice of School Finance. Chicago: Rand McNally and Company, 1967.

Glaze, T.E. Business and Administration for Colleges and Universities. Baton Rouge: Louisiana State University Press, 1962.

Hartley, Harry J. Educational Planning-Programming Budgeting: A Systems Approach. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.

Hubbard, R.E. "An Approach to Institutional Cost Analysis," Journal of Experimental Education, XXXI (December, 1962), 109-113.

Hull, L.E. "Pitfalls in the Use of Unit-Cost Studies," Journal of Higher Education, XXXII (October, 1961), 371-376.

Johns, R.L. and E.L. Morphet. Financing the Public Schools. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1960.

_____ (Eds.) Problems and Issues in Public School Finance. New York: National Conference of Professors of Educational Administration, 1952.

Kettler, R.W. "What's Wrong With the Unit-Cost Idea?" College and University Business, XIV (May, 1953), 17.

Knezevich, S.J. and J.G. Fowlkes. Business Management of Local School Systems. New York: Harper and Brothers, 1960.

Knezevich, S.J. "Resource Management and Educational Logistics," The Theory and Practice of School Finance. Edited by W.E. Gauerke and J.R. Childress. Chicago: Rand McNally and Company, 1967.

Lindman, Erick L. "A Three-Dimensional Program Account Classification System for Public Schools," Approaches to Program Accounting for Public Schools. Occasional Report No. 34. Los Angeles: Center for the Study of Evaluation of Instructional Programs, University of California, 1968.

Linn, H.H. School Business Management. New York: The Ronald Press Company, 1956.

Lipot, Charles A. "Summary of Discussion," in Erick L. Lindman. Approaches to Program Accounting for Public Schools. Occasional Report No. 34. Los Angeles: Center for the Study of Evaluation of Instructional Programs, University of California, 1968.

Mort, P.R., W.C. Reusser, and J.M. Polley. Public School Finance: Its Background, Structure and Operation. New York: McGraw-Hill Book Company, Inc., 1960.

Myroon, John Lyon. "Unit Cost Analysis of the Educational Expenditures of the County of Thorhild 1967-68." Unpublished Master's Thesis, University of Alberta, Edmonton, 1969.

Ovsiew, C., and W.B. Castetter. Budgeting for Better Schools. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1960.

Palethrope, Donald Sydney. "Unit Cost Analysis of the Educational Expenditures of the County of Grande Prairie 1969-1970." Unpublished Master's Thesis, University of Alberta, Edmonton, 1970.

Phi Delta Kappan, LII (December, 1970)

Reason, Paul L., and Alpheus L. White, (Eds.) Financial Accounts for Local and State School Systems, Standard Receipt and Expenditure Accounts. Bulletin 1957, No. 4, U.S. Office of Education. Washington, D.C.: U.S. Government Printing Office, 1957.

Rideout, E.B. "The Financial Support of Education," Canadian Education and Research Digest. VIII (June, 1968), 85-103.

Rosenstengel, W.E., and J.N. Eastmond. School Finance: Its Theory and Practice. New York: The Ronald Press Company, 1957.

Stecklein, J.E. How to Measure Faculty Workload. Washington: American Council of Education, 1961.

Tyndall, D.G., and G.A. Barnes. "Unit Cost of Instruction in Higher Education," Journal of Experimental Education, XXXI (December, 1962), 114-118.

U.S. Office of Education. Principles of Public School Accounting. Washington, D.C.: U.S. Government Printing Office, 1967.

Vaizey, J., and J.D. Chesswas. The Costing of Educational Plans. Italy: UNESCO - International Institute for Educational Planning, 1967.

Warren, Philip John. "Financing Education in Newfoundland," Unpublished Doctoral Thesis, University of Alberta, Edmonton, 1962.

_____ "Trends in the Financing of Education With Selected Implications," An Address to the ALtantic Conference of Teachers, St. John's, June, 1970.

Workman, William Laurence. "An Analysis of the Operating Expenditures of Three Junior Colleges." Unpublished Master's Thesis, University of Alberta, Edmonton, 1969.

APPENDIX A

CLASSIFICATION OF SUBJECTS USED TO DETERMINE PER PUPIL INSTRUCTIONAL COSTS

FIGURE 4

CLASSIFICATION OF SUBJECTS BY SUBJECT CLUSTER
FOR DIVISION I

Subject Cluster	Subject
Language Arts	Language
	Printing and/or Writing
	Reading
	Spelling II[a]
	Phonics
	Storytime
Social Studies	Social Studies
Mathematics	Mathematics
Science	Health Science
Physical Education	Physical Education
Religious Education	Religious Education
Fine Arts	Art
	Music and/or Singing

[a]A Roman Numeral following a subject indicates that the subject is offered only to that grade specified by the Roman Numeral. This applies in succeeding Figures 5-7.

FIGURE 5

CLASSIFICATION OF SUBJECTS BY SUBJECT CLUSTER
FOR DIVISION II

Subject Cluster	Subject
Language Arts	Language Printing and/or Writing Reading Spelling Phonics III Storytime
Social Studies	Social Studies III Geography IV and V History V
Mathematics	Mathematics
Science	Health Science
Physical Education	Physical Education
Religious Education	Religious Education
Fine Arts	Art Music and/or Singing
Modern Language	French V

FIGURE 6

CLASSIFICATION OF SUBJECTS BY SUBJECT CLUSTER
FOR DIVISION III

Subject Cluster	Subject
Language Arts	Reading VI Language Literature VII and VIII Spelling
Social Studies	History Geography
Mathematics	Mathematics
Science	Health Science VI General Science VII and VIII
Modern Language	French
Physical Education	Physical Education
Religious Education	Religious Education
Fine Arts	Art Music and/or Singing

FIGURE 7

CLASSIFICATION OF SUBJECTS BY SUBJECT CLUSTER
FOR DIVISION IV

Subject Cluster	Subject
Language Arts	Literature-General IX & X
	Language-General XI
	Literature-Academic
	Language-Academic
Social Studies	History
	Geography
	Geography-General XI
	Economics XI
Mathematics	Mathematics
	Algebra
	Geometry
Science	General Science IX
	Earth Science X & XI
	Physical Science X & XI
	Biology X & XI
	Chemistry X & XI
Physical Education	Physical Education
Modern Language	French
Religious Education	Religious Education
Fine Arts	Art
	Music and/or Singing

APPENDIX B

DIRECT INSTRUCTIONAL COSTS BY SUBJECT

TABLE XXXI

ESTIMATED PER PUPIL COSTS OF DIRECT INSTRUCTION IN DIVISION I IN EACH OF THE SCHOOLS WHERE DIVISION I SUBJECTS WERE TAUGHT IN THE SCHOOL DISTRICT: 1970-1971

		B			C			D			E		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Language	K	100	75	14.67	-			75	31	6.49	-		
	1	-			-			190	37	15.95	-		
	2	100	92	16.48	185	49	12.66	190	43	19.09	-		
Printing and/or Writing	K	50	75	7.33	50	45	7.08	-			-		
	1	75	72	17.97	50	47	4.37	75	37	6.29	175	31	19.77
	2	75	92	12.36	150	49	10.27	75	43	7.53	100	36	14.85
Reading	K	100	75	14.67	125	45	17.17	125	31	10.80	-		
	1	225	72	53.93	250	45	21.85	250	37	27.29	500	31	76.23
	2	325	92	53.55	300	49	22.60	250	43	34.48	350	36	45.52
Spelling	2	100	92	16.48	-			-			150	36	18.93
Phonics	K	-			75	45	10.62	-			-		
	1	225	72	53.93	150	47	13.11	-			-		
	2	-			-			-			-		
Storytime	K	100	75	14.67	75	45	10.62	75	31	6.49	-		
	1	40	72	9.59	75	47	6.56	-			-		
	2	-			-			-			-		

TABLE XXXI (continued)

		B			C			D			E		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Social Studies	K	-			-			75	31	6.49	-		
	1	-			-			100	37	8.39	-		
	2	-			50	49	3.42	100	43	10.05	-		
Mathematics	K	200	75	29.35	150	45	21.44	75	31	6.49	-		
	1	150	72	35.96	250	47	21.85	150	37	18.88	225	31	33.25
	2	175	92	28.83	250	49	17.12	150	43	24.43	350	36	35.22
Science Health	K	50	75	7.33	75	45	10.62	-			-		
	1	75	72	17.97	150	47	13.11	60	37	5.04	75	31	11.57
	2	40	92	6.59	140	49	9.59	60	43	6.03	100	36	10.80
Phys. Ed.	K	50	75	7.33	60	45	12.00	75	31	6.49	-		
	1	40	72	9.59	60	47	5.74	50	37	4.20	100	31	11.29
	2	50	92	8.24	60	49	5.51	50	43	5.02	50	36	4.07
Rel. Ed.	K	50	75	7.33	150	45	21.24	-			-		
	1	75	72	17.97	150	47	13.11	100	37	8.39	100	31	16.48
	2	200	92	8.08	150	49	10.27	100	43	10.05	150	36	16.70
Fine Arts Art	K	180	75	26.42	-			75	31	6.49	-		
	1	40	72	9.59	-			60	37	5.04	75	31	10.54
	2	60	92	9.88	75	49	5.14	60	43	6.03	100	36	9.93
Music and/or Singing	K	150	75	22.00	75	45	25.54	75	31	6.49	-		
	1	40	72	9.59	75	47	12.23	90	37	7.56	100	31	11.29
	2	100	92	20.52	60	49	9.36	90	43	9.04	-		

TABLE XXXI (continued)

		F			H			J			K		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Language	K	-			-			-			-		
	1	-			-			200	6	52.04	-		
	2	-			225	47	8.87	200	9	34.69	100	28	9.90
Printing and/or Writing	K	-			100	35	22.73	-			50	15	10.40
	1	100	45	20.11	125	34	16.79	-			-		
	2	100	27	11.32	75	47	4.79	-			50	28	4.95
Reading	K	125	25	25.39	200	35	36.63	-			150	15	31.48
	1	300	45	60.32	375	34	65.47	275	17	31.96	450	22	64.01
	2	450	27	50.93	450	47	25.73	200	16	23.42	450	28	44.70
Spelling	2	100	27	11.32	-			75	16	10.54	50	28	4.95
Phonics	K	-			-			-			-		
	1	-			-			75	11	2.27	-		
	2	-			-			75	7	3.56	-		
Storytime	K	50	25	10.16	100	35	19.07	-			-		
	1	50	45	10.06	-			100	17	19.84	-		
	2	-			75	42	2.31	100	16	21.08	-		

TABLE XXXI (continued)

		F			H			J			K		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Social Studies	K	50	25	10.16	-			-			-		
	1	-			-			100	6	52.04	-		
	2	-			-			100	9	34.69	-		
Mathematics	K	75	25	15.23	100	35	17.21	-			100	15	14.18
	1	300	45	60.32	300	34	41.84	200	17	20.33	175	22	24.90
	2	250	27	28.30	375	47	16.12	200	16	16.39	450	28	44.70
Science													
Health	K	-			-			-			100	15	14.18
	1	45	45	9.05	75	34	13.44	100	17	19.10	100	22	14.21
	2	50	27	5.65	75	42	5.95	100	16	15.41	100	28	9.90
Phys. Ed.	K	75	25	15.23	-			-			-		
	1	-			-			-			-		
	2	-			-			-			-		
Rel. Ed.	K	50	25	10.16	50	35	8.02	-			-		
	1	45	45	9.05	150	34	23.31	150	17	13.28	100	22	14.21
	2	100	27	11.32	150	47	8.89	150	16	10.71	150	27	15.40
Fine Arts													
Art	K	75	25	15.23	150	35	25.00	-			50	15	10.40
	1	50	45	10.06	100	34	13.94	75	11	1.13	50	22	7.09
	2	-			-			75	7	1.78	40	28	10.82
Music and/or Singing	K	75	25	15.23	50	35	7.02	-			50	15	10.40
	1	90	45	7.44	-			-			50	22	7.09
	2	90	27	10.74	75	47	1.10	-			35	28	10.82

TABLE XXXI (continued)

		L			M			N			O		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Language Arts													
Language	K	100	23	17.01	-			100	38	13.24	-		
	1	150	27	16.95	60	35	5.26	100	37	5.39	125	46	17.21
	2	-			120	27	18.57	250	47	12.72	225	57	19.91
Printing and/or Writing	K	100	23	17.01	-			100	38	13.24	200	50	11.33
	1	-			190	35	16.54	100	37	5.39	30	46	14.13
	2	150	25	18.80	100	27	15.59	225	47	11.44	50	57	6.51
Reading	K	100	25	17.01	-			100	38	13.24	450	50	25.47
	1	210	27	23.49	290	35	25.36	300	37	16.17	225	46	30.98
	2	225	25	28.13	470	27	73.17	400	47	55.92	225	57	24.27
Spelling	2	150	25	18.80	150	27	23.39	185	47	9.36	150	57	15.32
Phonics	K	-			-			-			-		
	1	-			30	35	2.57	-			150	46	20.65
	2	-			125	27	19.49	200	37	10.78	225	57	21.80
Storytime	K	30	23	5.10	-			30	38	4.05	120	50	6.79
	1	150	27	16.95	90	35	7.84	-			-		
	2	150	25	18.80	30	27	4.58	50	47	2.56	-		

TABLE XXXI (continued)

		L			M			N			O		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Social Studies	K	-			-			-			-		
	1	-			-			-			-		
	2	-			-			-			-		
Mathematics	K	100	23	17.01	-			100	38	13.24	300	50	16.99
	1	210	27	23.49	330	35	28.79	200	37	10.78	150	46	20.65
	2	375	25	47.08	200	27	31.19	250	47	28.84	275	57	28.59
Science Health	K	30	23	5.10	-			25	38	3.28	-		
	1	150	27	16.95	60	35	5.26	100	37	5.39	75	46	10.32
	2	-			90	27	13.99	55	47	2.80	150	57	13.90
Phys. Ed.	K	-			-			25	38	3.28	80	50	4.53
	1	-			100	35	8.81	-			-		
	2	-			60	27	9.17	-			45	57	4.36
Rel. Ed.	K	70	23	11.91	-			-			-		
	1	150	27	16.95	-			200	37	10.78	100	46	13.77
	2	150	25	18.80	90	27	13.99	110	47	5.60	150	57	13.90
Fine Arts Art	K	-			-			45	38	6.02	120	50	6.79
	1	150	27	16.95	20	35	1.71	-			-		
	2	-			40	27	15.20	50	47	2.56	30	57	2.46
Music and/or Singing	K	-			-			-			200	50	20.78
	1	150	27	16.95	60	35	8.79	-			100	46	10.27
	2	-			60	27	11.40	-			100	57	8.29

TABLE XXXII

ESTIMATED PER PUPIL COSTS OF DIRECT INSTRUCTION IN DIVISION II IN EACH OF THE SCHOOLS WHERE DIVISION II SUBJECTS WERE TAUGHT IN THE SCHOOL DISTRICT: 1970-1971

		B			C			D			E		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Language	3	250	85	47.10	250	37	23.19	190	35	23.71	50	32	12.49
	4	150	75	10.70	150	45	30.54	300	33	27.80	150	39	12.80
	5	225	91	22.06	225	51	31.52	225	32	24.06	150	38	15.30
Printing and/or Writing	3	20	85	3.76	75	37	6.96	75	35	9.36	50	32	4.95
	4	60	75	4.28	40	45	8.13	-			-		
	5	-			-			75	32	8.02	-		
Reading	3	300	85	56.51	350	37	32.46	300	35	48.92	250	32	53.79
	4	375	75	26.75	345	45	70.05	300	33	27.80	360	39	27.90
	5	240	91	23.53	400	51	56.01	300	32	32.08	360	38	31.24
Spelling	3	75	85	14.12	-			-			150	32	22.40
	4	150	75	10.70	150	45	30.54	-			150	39	11.92
	5	150	91	14.71	120	51	16.80	75	32	8.02	150	38	13.31
Phonics	3	-			-			-			-		
Storytime	3	-			-			-			-		
	4	-			-			60	33	5.56	-		
	5	-			-			-			-		
Social Studies													
Social Studies	3	-			75	37	6.96	75	35	9.36	-		

TABLE XXXII (continued)

		B			C			D			E		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Geography	4	90	75	6.42	120	45	24.38	120	33	11.12	150	39	11.57
	5	150	91	14.71	120	51	16.80	60	32	6.42	150	38	12.95
History	5	150	91	14.71	-			60	32	6.42	150	38	12.59
Mathematics	3	225	85	42.39	250	37	23.19	225	35	28.07	350	32	42.20
	4	300	75	21.39	300	45	61.09	300	33	27.80	300	39	23.84
	5	300	91	29.41	225	51	31.52	300	32	32.08	300	38	38.26
Science													
Health	3	60	85	11.29	150	37	13.91	40	35	4.99	90	32	19.41
	4	60	75	4.28	100	45	20.46	120	33	11.12	150	39	11.57
	5	150	91	14.71	90	51	12.60	150	32	16.05	150	38	12.95
Phys. Ed.	3	60	85	11.29	80	37	9.72	50	35	6.24	50	32	4.95
	4	50	75	3.57	160	45	16.00	-			75	39	5.09
	5	-			160	51	14.12	-			-		
Rel. Ed.	3	100	85	4.37	100	37	9.27	100	35	12.48	150	32	19.89
	4	150	75	10.70	120	45	24.38	150	33	13.89	90	39	7.86
	5	225	91	22.06	90	51	12.60	150	32	16.03	90	38	8.71
Fine Arts													
Art	3	60	85	11.29	75	37	6.96	30	35	3.74	100	32	11.91
	4	40	75	2.86	30	45	6.16	30	33	2.77	75	39	6.14
	5	-			40	51	5.60	30	32	3.21	-		
Music and/or Singing	3	100	85	4.37	60	37	12.39	50	35	6.24	-		
	4	80	75	1.03	120	45	4.20	45	33	4.16	-		
	5	120	91	1.27	120	51	17.98	-			-		
Modern Language													
French	5	60	91	10.23	20	45	3.95	-			-		

TABLE XXXII (continued)

		F			H			J			K		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Language	3	90	35	11.08	150	55	17.02	200	18	40.32	150	29	11.43
	4	150	37	12.38	150	49	18.31	200	28	25.92	150	28	16.47
	5	150	24	24.32	200	52	25.69	200	23	22.28	225	30	21.31
Printing and/or Writing	3	-			75	55	7.21	-			50	29	3.80
	4	30	37	2.59	-			-			50	28	5.48
	5	-			-			-			-		
Reading	3	240	35	29.57	450	55	32.92	200	18	44.96	450	29	34.32
	4	345	37	28.88	375	49	36.41	200	28	28.90	350	28	38.48
	5	225	24	36.48	200	52	29.17	225	23	25.15	325	30	30.77
Spelling	3	135	35	16.57	150	55	11.96	150	18	27.40	150	29	11.43
	4	150	37	12.38	150	49	14.85	150	28	17.61	100	28	10.97
	5	75	24	12.16	175	52	12.64	150	23	16.71	90	30	8.55
Phonics	3	-			-			-			-		
Storytime	3	-			75	55	5.66	-			-		
	4	-			-			-			-		
	5	-			-			-			-		
Social Studies													
Social Studies	3	-			-			-			-		
Geography	4	150	37	12.38	150	49	17.65	150	28	27.71	150	28	16.47
	5	150	24	12.16	150	52	12.63	200	23	22.28	150	30	14.35

TABLE XXXII (continued)

		F			H			J			K		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment]	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
History	5	150	24	24.32	200	52	11.63	200	23	22.28	150	30	14.35
Mathematics	3	300	35	36.96	300	55	22.89	300	18	44.96	325	29	24.79
	4	300	37	25.10	300	49	21.24	300	28	28.90	350	28	38.48
	5	300	24	48.64	200	52	27.12	300	23	33.58	225	30	21.31
Science													
Health	3	60	35	7.39	75	55	8.52	75	18	21.54	100	29	7.62
	4	60	37	5.07	150	49	14.70	100	14	20.20	100	28	10.97
	5	90	24	14.59	150	52	14.88	75	23	8.43	150	30	14.35
Phys. Ed.	3	-			-			-			-		
	4	-			-			-			-		
	5	-			-			-			-		
Rel. Ed.	3	150	35	18.48	150	55	13.78	150	18	27.40	150	29	11.43
	4	150	37	12.38	150	49	13.24	150	28	17.61	90	28	9.87
	5	150	24	12.16	150	52	13.50	75	23	8.43	135	30	12.83
Fine Arts													
Art	3	60	35	7.39	-			-			50	29	3.80
	4	75	37	6.25	-			-			50	28	5.48
	5	60	24	4.73	-			-			-		
Music and/or Singing	3	120	35	17.42	-			-			-		
	4	120	37	16.47	-			-			-		
	5	45	24	6.04	-			-			-		
Modern Language													
French	5	120	24	25.40	-			-			-		

TABLE XXXII (continued)

		L			M			N			O		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Language Arts													
Language	3	200	39	18.63	90	38	8.37	200	37	17.07	175	39	15.93
	4	150	30	14.76	150	33	12.17	200	33	23.20	200	51	26.28
	5	225	35	18.78	195	31	23.10	270	35	16.25	200	51	26.44
Printing and/or Writing	3	90	39	8.38	75	38	7.81	-			60	39	5.39
	4	-			-			-			-		
	5	75	35	6.30	-			-			-		
Reading	3	200	39	18.63	250	38	26.00	325	37	59.45	355	39	36.50
	4	225	30	22.13	325	33	26.36	225	33	26.03	275	51	36.14
	5	225	35	18.78	425	31	50.34	225	35	15.35	325	51	65.86
Spelling	3	150	39	13.97	175	38	18.27	250	37	21.43	150	39	13.49
	4	150	30	14.76	175	33	14.20	150	33	17.26	150	51	19.71
	5	75	35	6.30	75	31	8.88	150	35	9.03	150	51	16.87
Phonics	3	200	39	18.63	50	38	5.06	-			75	39	6.81
Storytime	3	200	39	18.63	125	38	13.01	60	37	5.18	-		
	4	-			-			-			-		
	5	150	35	12.48	-			-			-		
Social Studies													
Social Studies	3	-			25	38	2.53	-			-		
Geography	4	180	30	17.71	120	33	9.73	150	33	17.26	150	51	19.71
	5	150	35	12.48	140	31	16.58	170	35	10.23	150	51	16.87
History	5	-			-			170	35	10.23	-		

TABLE XXXII (continued)

		L			M			N			O		
		Min. Per Week	Enrol. ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Mathematics	3	200	39	18.63	225	38	23.44	360	37	51.33	360	39	32.38
	4	375	30	36.90	400	33	32.45	225	33	26.03	350	51	45.99
	5	225	35	18.78	285	31	33.76	225	35	13.54	200	51	22.50
Science													
Health	3	-			90	38	9.37	60	37	5.18	50	39	4.49
	4	-			70	33	5.68	120	33	14.43	150	51	19.71
	5	150	35	12.48	65	31	7.70	130	35	7.82	150	51	16.87
Phys. Ed.	3	-			80	38	8.33	-			-		
	4	-			65	33	5.28	-			-		
	5	-			30	31	3.55	90	35	7.84	75	51	8.43
Rel. Ed.	3	200	39	20.19	60	38	6.24	90	37	7.65	150	39	13.49
	4	180	30	17.71	60	33	4.87	150	33	17.26	75	51	9.85
	5	150	35	12.48	90	31	16.06	130	35	7.82	150	51	19.83
Fine Arts													
Art	3	60	39	5.59	75	38	9.52	30	37	2.59	-		
	4	-			75	33	10.62	-			-		
	5	-			44	31	7.84	-			-		
Music and/or Singing	3	-			60	38	8.10	-			100	39	12.12
	4	-			60	33	9.33	-			100	51	9.27
	5	-			90	31	7.44	-			100	51	9.27
Modern Language													
French	5	-			-			-			80	51	4.27

TABLE XXXIII

ESTIMATED PER PUPIL COSTS OF DIRECT INSTRUCTION IN DIVISION III IN EACH OF THE SCHOOLS WHERE DIVISION III SUBJECTS WERE TAUGHT IN THE SCHOOL DISTRICT: 1970-1971

		B			C			D			E		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Reading	6	225	107	24.91	290	56	33.95	300	39	24.08	225	41	26.19
Language	6	225	107	24.91	215	56	25.18	225	39	18.06	150	41	17.73
	7	200	86	34.40	200	53	20.91	225	35	33.34	225	29	30.87
	8	225	133	28.51	225	31	25.64	-			225	37	26.65
Literature	7	225	86	38.69	280	53	29.29	225	35	36.54	200	29	27.44
	8	225	133	28.51	200	31	22.79	-			200	37	23.69
Spelling	6	75	107	8.31	75	56	8.79	150	39	12.04	150	41	16.89
	7	75	86	12.90	30	53	3.14	150	35	13.83	90	29	12.34
	8	100	133	12.00	-			-			90	37	10.66
Social Studies													
History	6	100	107	11.07	60	56	7.02	60	39	4.82	150	41	17.57
	7	120	86	20.64	120	53	12.54	75	35	6.92	120	29	16.45
	8	60	133	7.50	200	31	22.79	-			120	37	14.22
Geography	6	150	107	16.60	70	56	8.20	60	39	4.82	-		
	7	120	86	20.64	120	53	12.54	75	35	6.92	120	29	16.45
	8	90	133	12.00	-			-			120	37	14.22
Mathematics	6	225	107	24.91	225	56	26.35	300	39	24.08	450	41	49.03
	7	300	86	51.58	225	53	23.53	300	35	27.67	300	29	45.39
	8	400	133	51.02	475	31	54.14	-			300	37	35.55

TABLE XXXIII (continued)

		B			C			D			E		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil
Science													
Health	6	150	107	16.60	120	56	14.05	120	39	9.63	90	41	10.48
General Science	7	120	86	20.64	120	53	12.54	225	35	19.51	120	29	16.45
	8	90	133	12.00	225	31	25.64	-			120	37	14.22
Phys. Ed.	6	-			60	56	9.64	-			-		
	7	-			60	53	10.19	-			-		
	8	-			240	31	34.86	-			-		
Rel. Ed.	6	120	107	13.29	75	56	20.49	150	39	12.03	90	41	10.81
	7	120	86	20.64	90	53	9.42	150	35	13.83	60	29	8.22
	8	67	133	10.78	75	31	18.17	-			60	37	7.11
Fine Arts													
Art	6	-			60	56	7.02	60	39	4.82	-		
	8	-			-			-			-		
Music and/or Singing	6	120	107	1.08	60	56	16.38	-			60	41	7.09
	7	-			30	53	8.65	-			-		
	8	-			60	31	14.79	-			-		
Modern Language													
French	6	90	107	8.68	60	56	7.02	-			30	41	3.21
	7	135	86	16.20	75	53	7.84	-			160	29	21.95
	8	90	133	13.97	175	31	19.95	-			160	37	18.95

TABLE XXXIII (continued)

		F			G			H			I		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Reading	6	225	28	25.87	-			300	49	23.49	-		
Language	6	225	28	25.87	-			200	49	20.70	-		
	7	225	32	37.84	200	60	25.69	-			120	23	27.89
	8	-			200	34	20.99	-			120	31	20.69
Literature	7	300	32	31.43	200	60	22.03	-			200	23	34.62
	8	-			150	34	27.25	-			200	31	25.68
Spelling	6	90	28	13.89	-			100	49	6.90	-		
	7	60	32	10.09	75	60	20.10	-			80	23	18.59
	8	-			150	34	15.74	-			80	31	8.93
Social Studies													
History	6	90	28	9.82	-			100	49	7.32	-		
	7	90	32	15.13	200	60	25.69	-			200	23	46.49
	8	-			150	34	15.74	-			200	31	34.49
Geography	6	-			-			100	49	6.97	-		
	7	90	32	15.13	200	60	25.69	-			200	23	47.47
	8	-			150	34	15.74	-			200	31	35.22
Mathematics	6	300	28	34.50	-			225	49	20.68	-		
	7	200	32	33.64	200	60	23.86	-			200	23	37.49
	8	-			300	34	32.80	-			200	31	31.69

TABLE XXXIII (continued)

		F			G			H			I		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Science													
Health	6	135	28	16.16	-			200	49	13.49	-		
General Science	7	150	32	25.22	150	60	17.84	-			200	23	42.72
	8	-			150	34	15.74	-			200	31	31.69
Phys. Ed.	6	-			-			-			-		
	7	-			-			-			-		
	8	-			-			-			-		
Rel. Ed.	6	120	28	13.81	-			150	49	11.38	-		
	7	90	32	15.13	150	60	20.10	-			80	23	13.85
	8	-			150	34	15.74	-			80	31	13.71
Fine Arts													
Art	6	-			-			-			-		
	8	-			-			-			-		
Music and/or Singing	6	45	28	5.18	-			-			-		
	7	90	32	9.06	100	60	21.96	-			-		
	8	-			100	34	19.38	-			-		
Modern Language													
French	6	120	28	21.77	-			-			-		
	7	150	32	23.81	150	60	21.48	-			-		
	8	-			150	34	18.95	-			80	31	3.46

TABLE XXXIII (continued)

		J			K			L			M		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Language Arts													
Reading	6	225	31	25.82	225	19	56.03	225	36	11.02	280	44	44.07
Language	6	225	31	25.82	225	19	56.03	225	36	11.02	150	44	13.18
	7	-			150	29	13.67	200	28	25.68	150	47	28.47
	8	-			75	12	21.04	225	33	40.44	200	36	24.78
Literature	7	-			200	29	18.22	200	28	25.68	200	47	29.99
	8	-			100	12	28.05	225	33	40.44	200	36	61.48
Spelling	6	150	31	16.71	150	19	37.34	150	36	14.74	180	44	13.18
	7	-			150	29	13.67	100	28	12.92	100	47	18.33
	8	-			75	12	21.04	-			100	36	9.50
Social Studies													
History	6	75	31	9.11	135	19	33.62	-			80	44	5.90
	7	-			150	29	13.67	100	28	12.92	-		
	8	-			75	12	21.04	135	33	24.36	100	36	12.39
Geography	6	75	31	9.11	90	19	22.40	200	36	19.61	80	44	5.90
	7	-			150	29	13.67	100	28	12.92	200	47	29.99
	8	-			75	12	21.04	135	33	24.36	-		
Mathematics	6	300	31	33.42	225	19	56.03	300	36	29.49	300	44	59.92
	7	-			200	29	18.22	200	38	25.68	200	47	43.94
	8	-			100	12	28.05	-			200	36	19.02

TABLE XXXIII (continued)

		J			K			L			M		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Science													
Health	6	150	31	16.71	90	19	22.40	200	36	19.61	60	44	4.55
General Science	7	-			150	29	13.67	200	28	25.68	175	47	38.09
	8	-			75	12	21.04	140	33	25.16	200	36	28.42
Phys. Ed.	6	75	31	9.11	-			-			30	44	2.18
	7	-			-			-			80	47	5.89
	8	-			-			-			80	36	3.84
Rel. Ed.	6	75	31	9.11	60	19	9.69	150	36	14.74	90	44	6.64
	7	-			150	29	13.67	125	28	15.93	120	47	13.10
	8	-			35	12	10.52	130	33	23.36	150	36	25.45
Fine Arts													
Art	6	-			-			-			44	44	5.52
	8	-			-			60	33	10.78	-		
Music and/or Singing	6	-			-			-			45	44	5.24
	7	-			-			-			60	47	6.55
	8	-			-			-			60	36	8.55
Modern Language													
French	6	-			-			300	36	29.49	140	44	14.61
	7	-			-			150	28	19.30	100	47	21.97
	8	-			60	12	22.48	225	33	40.44	100	36	9.50

TABLE XXXIII (continued)

		N			O		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts							
Reading	6	300	31	42.21	200	61	17.45
Language	6	225	31	24.53	200	61	20.58
	7	225	36	19.06	200	64	55.12
	8	225	32	21.44	210	56	33.79
Literature	7	405	36	32.70	225	64	28.43
	8	225	32	37.39	240	56	21.40
Spelling	6	75	31	8.99	100	61	13.26
	7	-			-		
	8	-			-		
Social Studies							
History	6	120	31	28.29	200	61	19.01
	7	135	36	10.86	185	64	14.48
	8	135	32	12.22	220	56	19.61
Geography	6	-			200	61	18.74
	7	135	36	10.86	160	64	19.91
	8	135	32	22.35	160	56	18.49
Mathematics	6	225	31	31.66	200	61	29.48
	7	315	36	46.42	200	64	22.59
	8	315	32	52.22	200	56	37.86

TABLE XXXIII (continued)

		N			O		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Science							
Health	6	-			200	61	16.01
General Science	7	200	36	16.08	140	64	17.42
	8	225	32	20.45	160	56	20.13
Phys. Ed.	6	90	31	8.85	60	61	5.65
	7	90	36	7.62	50	64	4.50
	8	90	32	8.57	50	56	5.15
Rel. Ed.	6	120	31	16.88	200	61	14.24
	7	60	36	4.91	150	64	13.52
	8	100	32	16.66	150	56	15.45
Fine Arts							
Art	6	90	31	12.66	-		
	8	-			-		
Music and/or Singing	6	-			100	61	7.75
	7	-			70	64	0.77
	8	-			70	56	0.88
Modern Language							
French	6	-			40	61	3.94
	7	-			105	64	8.95
	8	135	32	16.66	168	56	16.19

TABLE XXXIV

ESTIMATED PER PUPIL COSTS OF DIRECT INSTRUCTION IN DIVISION IV IN EACH OF THE SCHOOLS WHERE DIVISION IV SUBJECTS WERE TAUGHT IN THE SCHOOL DISTRICT: 1970-1971

		A			B			C			G		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Literature G	9	-			-			-			-		
	11	225	16	76.11	-			-			-		
Literature A	9	270	207	27.86	225	26	30.91	225	21	50.64	200	51	37.15
	10	225	147	30.73	-			-			200	30	37.15
	11	225	147	50.27	-			-			200	22	50.67
Language G	9	-			-			-			-		
	11	225	16	41.66	-			-			-		
Language A	9	225	207	28.46	225	26	30.91	225	21	50.64	200	51	19.32
	10	360	147	24.60	-			-			200	30	37.15
	11	360	144	40.52	-			-			200	22	50.67
Social Studies													
History	9	225	207	28.74	175	26	24.03	195	21	43.89	150	51	27.86
	10	180	146	31.61	-			-			150	30	19.84
	11	180	155	41.39	-			-			150	22	27.06
Geography	9	-			-			-			100	51	14.57
	10	225	21	40.06	-			-			-		

TABLE XXXIV (continued)

		A			B			C			G		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Geography G	11	180	16	58.61	-			-			-		
Geography A	11	135	13	76.80	-			-			-		
Economics	11	180	16	43.39	-			-			200	4	123.13
Mathematics													
Mathematics G	9	-			-			-			-		
	10	450	23	144.76	-			-			-		
	11	450	26	208.09	-			-			-		
Algebra	9	315	207	50.83	200	26	27.47	180	21	40.52	100	51	14.57
	10	270	128	37.27	-			-			200	30	26.46
	11	400	141	39.31	-			-			200	22	36.08
Geometry	9	180	207	29.06	200	26	27.47	180	21	40.52	100	51	14.57
	10	180	128	30.39	-			-			200	30	26.46
	11	315	143	44.63	-			-			200	22	36.07
Science													
General Science	9	225	207	29.92	175	26	24.03	195	21	43.89	200	51	48.46
Earth Science	10	-			-			-			-		
	11	-			-			-			-		
Phys. Science	10	225	23	50.79	-			-			-		
	11	225	16	73.02	-			-			-		

TABLE XXXIV (continued)

		A			B			C			G		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Biology	10	270	60	43.47	-			-			200	30	41.19
	11	225	66	31.46	-			-			200	22	56.17
Chemistry	10	225	68	39.28	-			-			-		
	11	225	78	51.31	-			-			-		
Phys. Ed.	9	270	207	11.63	-			240	21	51.46	-		
	10	270	151	12.76	-			-			-		
	11	270	176	12.31	-			-			-		
Rel. Ed.	9	180	207	24.96	150	26	20.60	75	19	18.17	150	51	21.86
	10	180	151	22.29	-			-			150	30	30.89
	11	180	176	41.75	-			-			200	22	50.67
Fine Arts													
Music and/or Singing	9	135	85	5.61	-			-			-		
	10	135	85	5.61	-			-			-		
	11	-			-			-			-		
Modern Language													
French	9	225	207	30.81	150	26	29.78	30	6	13.00	175	51	60.37
	10	225	125	32.18	-			-			150	30	19.84
	11	225	130	41.34	-			-			200	14	79.62

TABLE XXXIV (continued)

		I			K			L			M		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts													
Literature G	9	-			-			-			200	20	61.33
	11	-			-			-			-		
Literature A	9	200	24	33.17	75	10	25.25	225	30	44.48	200	22	61.24
	10	200	26	30.62	125	11	38.26	200	16	33.32	200	25	56.39
	11	200	22	31.45	125	9	46.76	200	17	68.81	200	26	59.83
Language G	9	-			-			-			200	20	51.90
	11	-			-			-			-		
Language A	9	120	24	19.88	75	10	25.25	175	30	21.88	200	22	61.24
	10	200	26	30.62	225	11	45.78	175	16	29.27	200	25	56.39
	11	90	22	14.15	225	9	55.96	200	17	31.36	200	26	47.17
Social Studies													
History	9	200	24	44.55	75	10	25.25	225	30	28.19	200	42	61.29
	10	200	26	41.12	225	11	45.78	225	16	37.60	200	25	56.39
	11	200	16	53.89	225	9	55.96	200	17	31.36	200	26	47.17
Geography	9	200	24	35.22	75	10	25.25	200	30	25.04	-		
	10	200	26	45.50	120	11	24.52	=			-		

TABLE XXXIV (continued)

		I			K			L			M		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Geography G	11	-			-			-			-		
Geography A	11	200	16	42.00	120	9	29.97	-			-		
Economics	11	-			-			125	17	26.08	-		
Mathematics													
Mathematics G	9	-			-			-			150	20	39.21
	10	-			-			-			-		
	11	-			-			-			-		
Algebra	9	100	24	17.92	125	10	21.05	100	30	19.50	240	22	37.37
	10	120	26	19.70	240	11	49.05	200	16	73.11	200	25	62.23
	11	200	16	53.89	240	9	59.95	200	17	68.81	240	26	71.82
Geometry	9	100	24	17.92	125	10	21.05	100	30	19.50	200	22	31.14
	10	200	26	33.16	180	11	36.82	200	16	73.11	150	25	46.65
	11	200	16	53.89	180	9	45.00	270	17	92.89	120	26	35.91
Science													
General Science	9	200	24	40.94	75	10	25.25	150	30	18.74	200	42	56.44
Earth Science	10	-			120	11	24.52	-			-		
	11	-			120	9	29.97	-			-		
Phys. Science	10	-			-			-			-		
	11	-			-			-			-		

TABLE XXXIV (continued)

		I			K			L			M		
		Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)	Min. Per Week	Enrol- ment	Cost Per Pupil($)
Biology	10	200	26	37.56	-			150	16	24.99	200	25	40.92
	11	200	22	44.39	-			200	17	31.36	200	26	39.35
Chemistry	10	-			-			-			-		
	11	-			-			-			-		
Phys. Ed.	9	-			-			-			80	42	9.88
	10	-			-			-			-		
	11	-			-			-			-		
Rel. Ed.	9	80	24	17.82	75	10	12.63	225	30	51.59	200	42	50.45
	10	30	26	4.00	55	11	11.43	112	16	53.99	90	25	18.96
	11	30	22	4.73	55	9	13.97	113	17	50.81	120	26	35.91
Fine Arts													
Music and/or Singing	9	-			-			-			40	42	1.65
	10	-			-			-			40	25	2.77
	11	-			-			-			-		
Modern Language													
French	9	120	24	17.30	120	3	89.93	200	30	25.04	180	42	29.33
	10	200	18	38.44	120	11	24.52	200	16	46.94	200	25	52.83
	11	200	16	43.25	120	9	29.97	175	17	38.62	200	26	59.83

TABLE XXXIV (continued)

		N			O		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Language Arts							
Literature G	9	-			-		
	11	-			-		
Literature A	9	225	28	31.54	225	31	26.18
	10	180	29	24.61	160	31	18.59
	11	225	27	60.91	160	42	13.40
Language G	9	-			-		
	11	-			-		
Language A	9	225	28	24.51	200	31	48.21
	10	225	29	23.66	200	31	22.04
	11	180	27	48.72	200	43	16.82
Social Studies							
History	9	180	28	46.98	160	31	18.18
	10	135	29	18.46	160	31	18.97
	11	180	27	48.72	160	43	25.45
Geography	9	90	28	12.58	160	31	20.54
	10	80	29	10.79	120	31	13.26

TABLE XXXIV (continued)

		N			O		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Geography A	11	-			80	43	13.22
Geography G	11	-			-		
Economics	11	-			-		
Mathematics							
Mathematics G	9	-			-		
	10	-			-		
	11	-			-		
Algebra	9	180	28	23.90	120	31	28.92
	10	225	29	30.77	200	31	23.71
	11	225	27	64.22	160	43	26.45
Geometry	9	180	28	23.90	120	31	28.92
	10	225	29	30.77	160	31	18.97
	11	225	27	64.22	250	43	41.33
Science							
General Science	9	135	28	18.95	200	31	48.21
Earth Science	10	135	29	18.46	-		
	11	180	27	48.72	-		
Phys. Science	10	-			-		
	11	-			-		

TABLE XXXIV (continued)

		N			O		
		Min. Per Week	Enrol-ment	Cost Per Pupil($)	Min. Per Week	Enrol-ment	Cost Per Pupil($)
Biology	10	-			160	31	36.70
	11	-			160	43	26.46
Chemistry	10	-			-		
	11	-			-		
Phys. Ed.	9	90	28	9.80	50	31	9.30
	10	90	29	9.46	50	31	9.30
	11	90	27	10.16	20	35	4.06
Rel. Ed.	9	115	28	16.25	120	31	56.84
	10	90	29	12.31	150	31	27.92
	11	90	27	23.73	120	43	19.84
Fine Arts							
Music and/or Singing	9	-			140	31	1.60
	10	-			140	31	1.60
	11	-			140	43	1.15
Modern Language							
French	9	105	28	14.81	160	31	13.92
	10	135	29	18.46	160	31	13.92
	11	160	27	23.29	160	43	10.04

APPENDIX C

INDIRECT AND IMPLEMENTARY COSTS INFORMATION

TABLE XXXV

ESTIMATED COSTS PER PUPIL OF INDIRECT AND IMPLEMENTARY EXPENDITURES PER GRADE IN THE SCHOOL DISTRICT: 1970-1971

Grade	Pupil Costs Per Expenditure Classification Series ($)[1]							
	100	200(b)	200(c)	300	400	500	600	Total
Kindergarten	9.62	17.77	7.78	36.91	25.20	2.66	2.61	102.55
One	9.69	17.75	7.47	38.30	24.50	5.35	2.55	105.61
Two	9.67	17.14	7.51	37.79	24.72	5.48	2.59	104.90
Three	9.70	17.02	7.39	38.66	24.13	5.52	2.42	104.84
Four	9.70	17.21	7.43	37.20	24.59	5.91	2.50	104.54
Five	9.69	17.04	7.47	36.89	24.81	5.79	2.52	104.21
Six	9.70	17.85	7.43	37.40	24.75	5.75	2.50	105.38
Seven	9.68	22.83	7.92	58.40	31.22	5.22	3.85	139.12
Eight	9.67	20.25	7.94	55.12	31.16	6.43	3.55	134.12
Nine	9.68	39.92	13.29	102.46	39.21	5.01	4.69	214.26
Ten	9.68	40.39	13.19	107.41	40.22	5.10	4.82	220.81
Eleven	9.66	41.65	14.40	107.10	39.46	5.22	4.65	222.14

[1]Expenditure Classification Series is presented in Figure 2, page 26.

APPENDIX D

DISTRICT ENROLMENT, AND SCHOOL FACULTIES AND OTHER INFORMATION

TABLE XXXVI

BREAKDOWN OF DISTRICT ENROLMENT BY GRADE AND GRADE DIVISION

Grade Division	Grade	Enrolment Per Grade	Enrolment Per Division
I	Kdgn.	337	
	One	450	
	Two	494	1281
II	Three	479	
	Four	481	
	Five	493	1543
III	Opp.	20	
	Six	542	
	Seven	522	
	Eight	435	1519
IV	Nine	470	
	Ten	319	
	Eleven	342	1131
	Total District Enrolment		5384

Source: Monthly Reports for October, 1970 submitted by each school in the district.

TABLE XXXVII

QUALIFICATIONS, EXPERIENCE AND AVERAGE SALARY OF SCHOOL FACULTIES

School	Number Teachers[1]	Average Experience[2] (years)	Average Training (years)	Average Salary($)[3]
A	26	4.0	4.0	7217.44
B	32	4.2	1.7	4966.49
C	17	4.0	2.2	5330.23
D	9	3.9	1.7	4811.85
E	11	2.7	1.7	4429.12
F	10	3.7	1.5	4649.64
G	12	2.8	1.0	3604.76
H	10	6.0	2.5	6152.70
I	6	4.7	3.0	5875.80
J	6	3.3	1.0	4183.66
K	9	3.2	1.4	4519.64
L	13	3.5	2.5	5464.36
M	18	3.5	2.8	5846.07
N	16	3.0	1.9	5031.93
O	22	4.2	2.0	5424.06
Total	217	3.8	2.2	5334.76

[1]Includes Principals and Vice-Principals. Also, the District was served by a Business Manager, a District Superintendent, and two Board Supervisors.

[2]The Newfoundland Teachers' Salary Scale grid provides for salary increments from five to eleven years respectively for Grades I to VII inclusive.

[3]Includes portional salaries chargeable to indirect salaries [Series 200(b)].

TABLE XXXVIII

GRADES TAUGHT, TOTAL ENROLMENTS, AND NUMBER OF REGISTERED ROOMS BY SCHOOL

School	Grades Taught	Number of Rooms	Total Enrolment
A	IX-XI	18	534
B	K-IX	27	842
C	K-IX	16	435
D	K-VII	8	285
E	I-VIII	10	283
F	K-VII	10	253
G	K-VI	7	197
H	VII-XI	12	321
I	VII-XI	5	126
J	I-VI	6	133
K	K-XI	9	242
L	K-XI	13	395
M	I-XI	18	419
N	K-XI	16	580
O	K-XI	22	339
Total		189	5384

APPENDIX E

FACULTY WORKLOAD SURVEY QUESTIONNAIRE

FACULTY WORKLOAD SURVEY 1970-1971

FORM A - 200(a) Direct Instructional Costs

1. Name:_____ 3. School:_____

2. Position:_____ School Address:_____

4. Circle the grade(s) you teach or the grade(s) in which you teach subjects:

K 1 2 3 4 5 6 7 8 9 10 11 Opp.

5. Teaching Grade or License:_____

6. Teaching Experience for Salary purposes: _____ years.

7. Total actual teaching salary: $_____ (Basic: $_____ Other: $_____)

8 Subjects Taught and Grade Level	9 Teaching Period	10 Enrolment Per Subject	11 Time Per Subject (Min. per week)	12 Time Per Subject (% total time)
Column Totals:			min/wk.	%

13. Special Conditions: (please use separate sheet if necessary)

FACULTY WORKLOAD SURVEY 1970-71

FORM B - 200(b) Indirect Instructional Costs

1. Name:_____ 2. Position: _____

NOTE It is recommended that the following information be estimated from a one-week period.

3. Indicate the time per week spent per specified duties:

	Min./wk.	% of total time
Teaching.....		
Administration and Supervision.....		
Guidance and Counselling.....		
Library.....		
Clerical.....		
Spare (preparation, etc.).....		
Other (specify).....		
Total:		100%

4. Indicate the percentage of time, other than teaching, devoted per grade division:

	%of total time
Division I (Grades K-2).....	
Division II (Grades 3-5).....	
Division III (Grades 6-8).....	
Division IV (Grades 9-11).....	
Total:	100%

5. If you are devoting a part of your time to Division IV, indicate the percentage of that amount you devote per program.

Program	% of time devoted to Division IV
Academic.....	
General.....	
Other (specify).....	
Total:	

(2)

FORM B (continued)

6. List the school(s) in which or for which your duties are performed, and indicate the percentage of your time spent per school:

School	% of time
_____	
_____	
_____	
_____	
_____	
_____	
Total:	100%