

AN ANALYSIS OF THE EDUCATIONAL EFFORT
OF A SINGLE ENTERPRISE COMMUNITY:
RED LAKE, ONTARIO

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ABSTRACT

The purpose of this study was to analyze the educational effort of Red Lake, Ontario, a single enterprise community whose very existence depends upon the mining industry.

The period 1965 to 1968 was selected for the research and a detailed study was made of local wealth, with special emphasis placed on personal income and real property holdings. Local education expenditures were also considered through referral to school board financial statements.

The educational effort of the community was examined on the basis of its financial support for education at the elementary and secondary school levels. Although an attempt was made to indicate several measures of effort, the prime measure used in this study was in comparing actual expenditures with the ability to spend.

From the findings based on the study, the following could be concluded:

1. There was a definite willingness on the part of the community to support all forms of local elementary and secondary education, with a special emphasis on the vocational area.
2. The level of support for education made possible through the efforts of the local residents was boosted higher

through assistance from senior governments in the form of grants-in-aid.

3. There was a steady increase in the level of effort throughout the period under study.

4. The increase in the educational effort was not evenly distributed over the various areas of operational expenditures.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

I. INTRODUCTION

To benefit most fully from education, a populace must be prepared to expend a reasonable measure of effort in the support of its ongoing growth and development. Educational effort may be interpreted as financial support for education, and its measures may be numerous. However, they are basically centred on comparisons between money available and money expended.

Administrators responsible for financing education have found an ever-expanding need for special information on price and quantity change in providing a myriad of new services, and at a time when the costs of these services are rapidly increasing. In order to maintain control, periodic analyses of the situation would seem mandatory. These may be brought about effectively through the construction of indices of cost, burden, ability and effort.

II. STATEMENT OF THE PROBLEM

It was the purpose of this study to analyze and attempt to measure the educational effort, for primary and secondary schools, of a single enterprise community, Red Lake, Ontario. The research sought to evolve several indices of educational effort through

consideration of relationships between the burden experienced by the citizens of the community, their level of ability to support education, and their actual expenditures in support of local schools. Essentially, the final intent was to evolve a composite index of effort based on net educational operating expenditures per pupil and total personal income per capita.

III. SIGNIFICANCE OF THE STUDY

Indices of educational effort are useful for comparative purposes between communities and/or for comparative purposes over a period of years within a particular community. Data acquired in the development of various indices may also be used to advantage in studying problems related to educational effort such as program quality, pupil-retention, pupil performance, teacher-turnover and teacher status in the community.

The approach used in this study could be applied to other communities within a province. An important aspect of this application of indices could be the development of provincial or regional norms against which the educational effort of particular communities may be cast, for the purpose of comparison in regard to ability and effort in supporting local schools.

IV. ASSUMPTIONS

It was assumed that the single enterprise community, by its singular insularity, while limiting the scope of a study of this type, also offered unusually good opportunities for collecting required data to be used in index construction for measurement of effort.

For purposes of this study, it was also assumed that a sizeable sample of personal income, such as that reported on tax returns for any given year, would in fact reflect the total personal income of a community. Additional figures indicating wealth, or absence of wealth, were applied subject to their availability, validity and reliability.

V. DEFINITIONS OF TERMS USED

The educational and financial terms used are herein defined as the writer wishes them to be accepted for the purpose of this study:

Wealth. The total community resources as they may be measured by income and property valuation constitute wealth.

Ability. The economic resources which a community may command to meet various needs indicates ability.

Burden. Educational burden is represented by those children actually attending school.

Effort. In this study, effort is a ratio of local educational expenditures to local wealth. This ratio may be expressed in a percentage or decimal form, or some unit formed by a combination of sub-indices.

VI. DELIMITATIONS

It was originally intended that the study consider the entire Red Lake Mining District as a unit, treating the several tiny communities serviced by the Red Lake Composite High School as one whole. However, the unique structure of the settlement area and the limited availability of accurate demographic information made this inadvisable. In order to effect a truly valid treatment it was found more desirable to study the hub, Red Lake Township proper, as a separate entity. Involvement of outlying areas in the District was brought about only for purposes of comparison, where these comparisons would facilitate an understanding of the hub town.

It was also decided that only the period 1965 through 1968 be used. Again, this was due to a lack of reliable data pertaining to earlier years.

VII. LIMITATIONS

The research was limited to a consideration of two major

financial areas:

1. A study of local education expenditures as reported in school board financial statements;
2. A study of local wealth with special emphasis placed on personal income and real property holdings.

It was felt that limiting the research to these areas, for which reliable information was available, would help ensure the validity of the findings of the study.

VIII. SOURCES OF DATA AND ORGANIZATION

Sources of data. The major sources of data for this study were financial statements of the three school boards serving Red Lake, the local municipal officers, the Ontario Department of Treasury and Economics, Canada Manpower Centres and the Dominion Bureau of Taxation.

Some variables which may contribute to a more accurate measure of wealth have been omitted because of some doubt as to their validity. These include the number of power boats and automobiles registered in the community and sales tax receipts.

Organization. The balance of this study is divided into five additional chapters. Chapter two is devoted to a review of pertinent literature related to studies of relationships

among the various factors considered, with an emphasis placed on educational effort. Chapter three describes the community under study. The historical, geographic and demographic factors which aid in a better understanding of the problem are largely considered.

Chapter four explains the data collection procedures and the methods of analysis. Chapter five provides a tabulation and summary of data and the results of data analysis. Chapter six includes a summary of findings and conclusions and the investigator's interpretations of the implications.

CHAPTER II

REVIEW OF THE LITERATURE

The advisability of continuing investment in education is very apparent to any thoughtful person living in this world of rapid technological change. The human resources of a nation are probably its most important asset. The economic cost of developing these resources to an optimum level is considerable, and is worthy of close examination and continuing re-evaluation.

A review of the literature on educational finance can help disclose methods of determining levels of wealth, ability, and in particular, effort. The information gained in this manner can be utilized for the benefit of those whose task it is to administer effective educational programs economically.

I. INVESTMENT AND FINANCE IN EDUCATION

Education as an important investment. When economists and educators consider the importance of education, the view that emerges time and again is that education is vital to both the nation and the individual. It is an excellent investment for the individual himself, even if in the latter years of garnering that education he must forego income to better his academic standing. It is also an excellent investment for communities and nations, for levels of education of their populations are strong indicators

of social and economic progress.

Previous research in this area has been confined to studies of countries and provinces or states. Relatively little research is concerned with Canadian education and almost no research has been done at the local government level.

Galbraith, whose views as an economist have been influential in American policy for several years declares that:

Investment in education, assessed qualitatively as well as quantitatively, becomes very close to being the basic index of social progress. It enables people to realize a dominant aspiration. It is an internally consistent course of development.¹

Writers in educational economics and organization have also been forceful in their statements regarding the overriding importance of education to the development of the nations of the world. Morphet, Johns and Reller state that:

More people than ever before recognize that the progress of civilization depends fundamentally on developing the human resources in all countries of the world. Basically, this development is determined² by the extent, kind and quality of education provided.

They recognize the relationship between cost and quality of education and advocate investments in people in order to create the human capital which is necessary for progress.

Schultz considers the economic capabilities of man to be predominantly a produced means of production. He allows for differences in inherited abilities, but insists that most of the

differences in earnings are a consequence of differences in the amounts that have been invested in people. He suggests that the rate of return on investment in education may be as high or appreciably higher than that on investments generally.³

According to Rideout:

In recent years it has become increasingly apparent that much of our educational expenditure is, in fact, creating producers' goods, that is goods and services capable of entering into the production of other goods and services....⁴

The benefits to be gained through educational investment are, as Hemphill advises, not restricted to the individual:

There is a growing body of knowledge which indicates the value of education to the individual in economic returns, but more importantly, the value of increased levels of education as a major factor in national economic growth.⁵

Writers in the field generally agree that education is an important investment in human capital. Some claim that it is in fact the highest yield investment available to a man today, and he cannot survive without a substantial amount in his possession. It must be noted, however, that research also indicates educational spending resembles other investments in that a low expenditure generally results in a low return. While statistical studies show a high correlation between expenditures on education and educational and social achievements, Moffat indicates his concern that, "Canadians have been a little too indifferent to the relationship between costs and results."⁶ In any case, the extent

to which provincial and local authorities will choose to make an investment in education rather than in something else will in large part be determined by the value which they place upon it.

Quality and cost in education. The rapidly increasing costs of education must also be considered carefully. It could be stated with reasonable accuracy that increases in the cost of education have averaged more than ten per cent annually for the past ten years.⁷ There are several reasons for this, including general inflation, increasing school-age population and increased awareness of the importance of quality school programs.

Mort has stated that he sees evidence to support the better quality of education where more money is spent:

There is considerable evidence indicating that, when conditions are favorable and all factors are reasonably equal, increased expenditures within reasonable limits do result in a better program of education.⁸

Vaizey, for his part, feels:

Every teacher, every councillor, every parent must be aware that the grave inadequacies, past and present, of our educational provision can be ascribed in large part to inadequate expenditure.⁹

Financing education in Canada in more recent times has meant facing major problems. In the past two decades citizens and taxpayers in this country have seen an accelerated increase in the birth rate, a rapid upsurge in the flow of immigrants, an emphasis upon the retention of pupils in high school, and

several other factors that have placed severe strains upon the financial abilities of some local administrative units to meet their share of the ever-increasing educational costs. Moreover, spiralling prices and the rising demand for new and more services will continue.

The importance of finance in education is emphasized by Bowler:

The budget must be considered as the fiscal translation of the educational program. Sooner or later, everything we desire to do in public education must be translated into its dollar and cents equivalent.¹⁰

In budgeting it is advantageous to be aware of what percentages various sections of the educational program are costing, and where the greatest need for funds is located. A report of the Canadian Teachers' Federation estimates that for the period 1953-63, twenty-nine per cent of the increase in costs was due to growth in enrolment, nineteen per cent was due to inflation, and fifty-two per cent was due to improvement of educational services.¹¹

It would seem there is a definite need for government aid in education to ensure each child equal access to a minimum foundation program, and to encourage local districts to offer programs above the minimum foundation level. Community needs are of vital importance and one should be aware of them. The disparity between school needs and municipal resources is highlighted by

contrasting situations in different kinds of communities. According to Lexton:

A great deal more money is now being spent by schools of the Big City in upper-income areas. Certainly an argument can be made that in a democratic society the reverse of this should be true, since need is greater in lower income areas.¹²

II. INDEX NUMBERS IN EDUCATION

An explanation of indices and their use. The process of making comparisons between various factors involved in educational finance is facilitated by the use of tools such as indices. Index numbers have been in use for two hundred years. It has not been until this century, however, that they have been used to any great extent. They were first used by economists to measure price changes of commodities. Inman, a Canadian economist, refers to the value and use of index numbers in this way:

Fortunately, statisticians have developed methods of estimating the degree of price level fluctuation from one period to another. The instrument utilized to find the amount of price level rise or fall is known as an index number. An index number is a statistical device used to measure quantitative changes in groups of data.¹³

The expanding need for special information on price and quantity changes has led to the compilation of a wide variety of indices by economists in both governmental and private agencies. Statisticians in the last few years have devised indices on such items as export-import prices, construction prices, consumer

prices and transportation rates. Index number techniques have also been used in such fields as accounting and engineering, as well as in education.

Several studies, utilizing index numbers, have been compiled in the field of education in the last fifty years. The index numbers have basically been of two types:

1. Percentage of increase or decrease in expenditures over a period of two or more years,
2. Percentage of increase or decrease in costs as they are influenced by rising or declining costs of living.

Indices of teachers' salaries, primarily for the purpose of comparison with the cost of living, were computed very early in this century. Ayres was among the first to develop a simple index of educational expenditures as early as 1910.¹⁴ He compiled ten sets of data, all related to public day schools, and used them in a final index. Each index was brought into a relationship with a common base of one hundred. The ten were then added and averaged and this became his composite index.

This method utilized a simple average with equal weights for all components. No ratios were computed to indicate relative importance. There were no criteria for the selection of the ten items except that each of the ten were interrelated and interdependent.

In 1938, the Research Division of the National Education Association compiled an index that compared school costs between 1914 and 1918.¹⁵ The general procedure was to base all the measurements of changing costs upon the cost of the school program in any single selected year and to calculate what the same program would have cost in other years.

A more recent "Cost of Education Index" was compiled by Furno for School Management Magazine. This index consisted of a set of data on per pupil expenditures and related averages in standard budget categories in school districts. These school districts were classified by geographic region and size of school district. Wasserman states that these data constitute an index in the sense that they have been compiled in the form of ratios and averages and that they may be used to compare the district's own expenditures in different years.¹⁶

Furno's index is designed to help administrators and school board members alike to calculate and use significant data for their own areas. The index permits a comparison of a district's overall costs with those of other districts in the same geographic region and size group. Comparisons of expenditures for specific items such as transportation, teachers' salaries, administration and food services can be made. Another use is in the preparation of budgets that will present a balanced pattern

of expenditures, so that no one area of school costs is unduly favored.

For the purpose of this study, the Furno approach could eventually be used for a comparison and evaluation of the efforts local taxpayers are making for the education of their children, and a comparison of spending with districts whose wealth--or ability to pay--is similar to the local situation.

Restrictions and limitations. There are some definite restrictions and limitations recommended in the development of cost of education indexes. Some writers feel it is essential that statistical procedures be employed that utilize economic indicators. Among these are listed sales tax receipts, amount of passenger automobile licence tax paid, value of farm products, number of gainfully employed workers for each community, or similar measures which might predict the relative proportion of the true value of property in each community, since most school districts can levy taxes only on property.

Per capita figures have usually been used in preparing comparative data because such figures are the most easily understood and the most universally accepted. They reduce, in part, the complexity of any indexed analysis of educational effort.

III. MEASURES OF WEALTH AND ABILITY

The concepts of wealth and ability are important in the assessment of educational effort of a community. A wealthy community should be able to provide quite easily for the basic needs of education, whereas an impoverished citizenry would face definite hardship in attempting to duplicate such standards.

Measures of wealth. It was Adam Smith who once said:

Fixed capital consists of (a) useful machines, (b) profitable buildings, (c) improvements of land which result in profits, and (d) the acquired and useful abilities of all the inhabitants or members of a society.¹⁷

Ricardo, an economist of the early 1800's, defined capital as:

...that part of the wealth of a country which is employed in production, and consists of food, clothing, tools, raw materials, machinery, etc., necessary to give effect to labor.¹⁸

Other approaches to the determination of a wealth base are many and varied. Most recommend that an all-encompassing view be taken. Some are so broad as to include such factors as skill, energy, and habits of the laborer.

Real property has been used almost exclusively as an indicator of local wealth or local ability to support local educational programs. The Canadian Teachers' Federation in a recent report took the stand that, "The best indicator of provincial

wealth is personal income."¹⁹

Wealth then, according to the writers, is something that can be expressed in economic terms. It may be defined broadly as all things that have value, or it may be defined in a more restrictive sense to refer to fixed assets.

Measures of ability. It is an accepted principle in economics and finance that if people are to be taxed they should be taxed in the fairest way possible, and on the basis of ability to pay. Residents of a community expect to be taxed in order to pay for such necessities as schools, roads and health services. Where federal, provincial and municipal taxing authorities are cognizant of the needs of an area, the governing bodies should attempt to set tax loads that are equitable. In providing the greatest good for the greatest number, it is also necessary to do the least harm possible. The secret is in accurately determining the ability to pay.

Salisbury writes:

In the early days of ability-to pay theory, property was the yardstick of ability. With the industrialization of society and a more complex economy, a successive shift occurred, emphasizing income rather than property as the index of ability. The personal income tax came to be considered the most equitable tax...and...the demand of the public for equality of educational opportunity, regardless of location and local circumstances, must be met by a public policy decision to use the true basis of wealth, with income as the basic determinant of revenue sources, to defray the expenses incurred in the common interest of all.²⁰

When considering the use of specific taxes, legislators might note the comments of Samuelson, who looks upon the property tax as being rather inflexible.²¹ Because rates and assessments tend to change slowly, this tax may tend to become regressive relative to income. The situation tends to become magnified when small properties tend to be assessed relatively higher than large.

The tax on personal income, particularly when it is progressive, appears to be the fairest and most commonly used in recent years in regard to ability to pay. However, Miner states that, "higher incomes must persist before they are perceived as being a permanent indication of a greater ability to support higher levels of school spending."²²

When total income of the people of an area is known, along with the total population figure, it is possible to determine the per capita income. From this can be derived the income per child of school age, as well as the income per pupil in average daily attendance.

Problems in measurement. There are several basic problems associated with the use of any criterion as a measure of ability. Under the Strayer-Haig Plan, the equalized assessed valuation of the real property constitutes the basis for determining ability to pay.²³ The volume of retail trade is considered by many economists to be a good indicator of a school district's ability to

support its public schools, but a question arises in areas heavily frequented by tourists as to what percentage of sales is attributable to tourism.

Disposable income is a very useful concept in determining ability, but a difficult figure to obtain for the individuals who make up a community. Bellan describes disposable income as, "the aggregate of money income which people have left after paying their personal income taxes."²⁴

After studying the matter at the provincial level, the Canadian Teachers' Federation is of the following opinion:

In education, comparisons between provinces are always made whenever statistics are released on per pupil costs, teachers' salaries, and other educational expenditures. These comparisons are usually made without regard to the differences in wealth which exist between provinces. It is suggested, therefore, that in order to make valid comparisons, ability should be taken into account. "Ability" consists of a comparison between the amount of money a province has (wealth) and the number of children (load) it must provide for. The best indicator of provincial wealth available at the present time is personal income. Either student population or potential student population (children age 5-19) may be used for load.²⁵

Some provinces cannot afford to spend as much on education as others. Again, rural districts cannot afford to spend as much as cities. As a result the educational pattern across the country resembles a patchwork, where the education which Canadian children receive is largely a matter of chance, depending on where they are born.

The Manitoba Royal Commission on Education in 1959 held that personal income was extremely important in considering educational expenditures:

During this same period, (1930-1957) personal income in Manitoba and in Canada as a whole increased rapidly. This increased personal income has had the effect of keeping educational expenditures a relatively stable proportion of personal income. However, any serious reduction in total personal income would undoubtedly create hardships in financing education at present levels.²⁶

In specific regard to this area Miner found:

The most appropriate measure of ability to pay for education is probably the total income of the community in relation to its population. The distribution of income and wealth is also important, as is the amount and form of wealth and the place of residence of its owners....²⁷

In a paper delivered to the Eighth National Conference on School Finance, Johns stated:

An adequate treatment of local ability to support schools would involve a comprehensive treatment of the effects of all programs of federal, state, and local taxes on public school financing.²⁸

He brings into focus indirect measures of local ability to support schools and, in so doing, offers some valid arguments against the use of property tax as a base for ability. The extra municipal costs in large cities are blamed for a reduction in ability of taxpayers to support schools. The variation from one area to another in the ratio of an assessed value of property to its true value is also questioned.

In addition, Johns prefers income tax to property tax for a measure of fiscal capacity, because the national income from property in the United States dropped from twenty per cent in 1929, to ten per cent in 1963.²⁹

Francis, writing in School Progress, emphasizes:

The major factor in the country's ability to meet the financial needs of education in the 1970's is the rate of economic growth achieved, priority given to educational expenditures by various levels of government and the willingness of individuals and business to forego other expenditures.³⁰

This is but one more example of the concern for the costs of education and the ability of the population to pay.

In this study the intention was to establish the effort made by a community by using personal income and property as prime indicators of ability.

IV. MEASURES OF EFFORT

The relationship of burden to effort. The educational burden of a community was defined earlier as being the total number of children regularly attending school. According to Miner, "technically, the educational burden is the number (relative) of children who must be educated."³¹ The Canadian Teachers' Federation says the potential educational load is indicated by the number of school age children (5-19 years) resident in the nation.³² A base of 5-17 would have been preferable but is not available

from Census of Canada data.

As an indicator of the national burden the Economic Council of Canada reports:

Canada now has, in relation to its total population, one of the largest school populations in the world. The great post-war baby boom in Canada, which was relatively larger than that in the United States or elsewhere, has been a very rapidly rising proportion, over the past decade and a half, of those of secondary school and post secondary school age who are in school. Although these enrolment ratios are still significantly lower than in the United States, they have been rising faster in Canada since the mid 1950's and particularly since the beginning of the 1960's.³³

The general consensus among several leading researchers is that tax burdens are high, educational disadvantage is growing, and political resistance to applying increased local resources to education is on the rise. It is also felt, generally, that government must "compensate" more for poor income levels of some local families. This becomes obvious in a province such as Newfoundland which in 1966 had nearly twice as many children to educate per thousand of its labor force (1,133) as did Manitoba (581), British Columbia (587), and Ontario (589).³⁴ The problem is accentuated by the low economic resource base of Newfoundland.

Within the provinces foundation programs provide for a minimum level of effort below which no school program should fall. It is not good policy in an interdependent society to permit any school to provide children with a program that falls below an acceptable standard.

It is the feeling in the Ontario Department of Education that:

Many professional educators contend that the burden has become so great that new sources of revenue and new forms of taxation must be found that will reflect education as a provincial investment while protecting local prerogative and interest. They argue further that raising the level of education for Canadians, of whatever province, represents a national gain, and that federal financial commitment to education by direct subsidy should be sought.³⁵

Problems arise under a cost-sharing plan. When a share of costs is undertaken by a governing body a share of control of spending is often also involved. A local school board given a lump sum of money by a provincial government could distribute this in a manner best suited to its own purposes. If conditions are dictated that certain percentages should be spent in certain areas, the local board might find itself being forced to devote extra effort in an area where it is not required.

The Red Lake school boards, during the period under study, operated under a system whereby they were given grants in the form of lump sums which they could spend in whatever manner they felt would best serve their obligation to the community. This was a different situation than the one experienced by boards in Manitoba in the same years as the following excerpt of a Manitoba Association of School Trustees' statement to the news media in July, 1969 indicates:

It must be made perfectly clear that, rightly or wrongly, the greatly increased expenditures on education which began two years ago were a direct result of government incentives and a giant set-up which required boards to spend specified amounts on specified items in order to qualify for grants.

Recognizing how the grant set-up was interfering with efficiency at the local level, Manitoba trustees passed the following resolution at their annual convention in November, 1968:

That the existing subdivided grant structure be replaced by a lump sum grant covering the basic cost of the Foundation Program, and vesting in local boards the responsibility for meeting their financial obligations and providing the best in education within the range of these resources.³⁶

Another concern in this regard is expressed by Moffat:

What is the point at which too high a proportion paid by the province throttles local initiative and too low a proportion imposes impossible burdens?³⁷

Measuring effort. Educational effort and effective means by which it may be measured are vital to an understanding of a community's attitudes toward education. There are several definitions of effort, but they all seem to suggest a ratio of some measure of expenditure as compared with some measure of ability to spend. Perhaps the most commonly used measure of effort, as suggested by Johns and Morphet, is the percentage of the income of the people represented by gross expenditures for schools.³⁸

The Canadian Teachers' Federation reasons as follows:

The principal measure of effort...is the per cent that expenditure for education is of personal income. This relationship is equivalent to the per cent that per capita expenditure is of per capita personal income or that per pupil expenditure is of personal income per pupil. By this method ability to support education is taken into account and effort

alone is compared. Personal income has been used most frequently because it is the only available measure of wealth which is distributed by provinces. The preferable base, gross national product, has been used for comparisons at the national level. Personal income is quite satisfactory, however, since it is a major component of gross national product.³⁹

Lazert, in a 1960 report, determined the relative educational effort of the provinces by employing a ratio of elementary and secondary school expenditures to personal income.⁴⁰

Cheal proposes three measures of effort:

1. The total school board revenues as a percentage of personal disposable income minus a basic \$500 for necessities,
2. The total provincial and local expenditures per pupil in average daily attendance as a percentage of personal disposable income per pupil in average daily attendance,
3. Total school board expenditures on a weighted-school-age-child as a percentage of personal disposable income per weighted-school-age-child.⁴¹

He defines "weighted-school-age-child", as a child in the 15 - 19 age group weighted 1.6. This weighting is used to compensate for differences in elementary and secondary costs.

Variations in financial effort can, according to Corbally, be measured in a variety of ways. It is his contention, however, that:

At the local level, the most valid factor for measuring effort involves a comparison of assessed or true valuation of property and the dollars raised from local sources for school support.⁴²

It is at the local level that some of the more intangible measures of effort appear, and these are of particular interest when the community is unique in the sense that it is located on a frontier of settlement. MacDougall, a teacher-pioneer writing about conditions in the North Bay-Porcupine mining district at the turn of the century states:

That there are glaring inequalities in the social and economic spheres even in the best administered commonwealths no one will deny...the man who moves to the frontier lines of civilization to hew out a home for himself and, incidently, to enlarge the public domain and add his quota to its actual wealth, pays an undue price for his daring service when he not only sacrifices his own comforts but penalizes his children and discounts for life the chances of his growing family. The child of the "shack" has the same inalienable right to a finished education as the child of the palace.⁴³

Again, at the local level, individual effort may sometimes be determined fairly accurately. For instance Bannister, writing about conditions in 1813 in Norfolk County on the shores of Lake Erie, where Ryerson, founder of the free school system of Ontario was born, reports:

It is interesting to note the extent to which the subscribers were willing to pay for the education of their children. Considering wages and costs of the day, the common laborer would have to work a month and a half to pay for a year's schooling for one child. It was equal to the value of $5\frac{3}{4}$ sheep, half the value of an ox, or $\frac{2}{3}$ the value of a good cow. The widow who found it necessary to work for her support would have been obliged to give the entire proceeds of $3\frac{1}{2}$ months' labor for the education of one child.⁴⁴

In a letter to the writer, Parrot, the Red Lake historian describes the first local efforts toward formal education in that

community:

I found that the first school in Red Lake was in a log warehouse with a voluntary teacher, without pay or cost to the pupils or parents from 1928-1930. About 1930-31 as more children arrived, Red Lake's first (regular) school was built by voluntary labor, it was a frame building 14' X 16' and the lumber cost \$300. The teacher was paid by the newly formed Red Lake School District #1 which carried on till 1967 when it was amalgamated into Board of Education. I have the recollection that every man employed in the mines paid a Poll Tax of one dollar per month for school support and the Government paid the balance.⁴⁵

The Bannister and Parrott reports suggest another possible measure of effort: a determination of the number of days per year each worker labors in support of local schools.

Because personal income per capita is the most frequently mentioned measure of wealth, it is interesting to note its relationship to educational effort as interpreted by Atherton:

Expressing expenditures on education as a proportion of personal income can be a useful device for comparing efforts of different regions, but such comparisons are likely to be deceptive. The tool of income elasticity, however, can eliminate some of this deception.⁴⁶

Income elasticity is described by Maltby as a measure of the demand existing for a commodity.⁴⁷ It is a concept widely used in the United States, but so far almost completely ignored in Canada. When applied to schools it is defined as the percentage increase in expenditure on education associated with an increase of one per cent in personal income. A resistance to increased spending for education would be indicated by a coef-

ficient of less than one, while a coefficient of elasticity far greater than one would suggest a ready willingness to pay for expanded programs.

V. SUMMARY

This chapter was devoted to a consideration of literature related to the problem of analysis of educational effort.

The first section explored the areas of finance and investment in education, making some reference to quality and cost. Next, indices, the tools and techniques most commonly used to determine relationships in educational finance were explained. The concepts of wealth and ability were investigated and the problems of their accurate measurement were elaborated upon.

Finally, literature on educational effort was discussed. The relationship between burden and effort was shown and various approaches were presented for the measurement of effort. The relationship of educational expenditure to personal income appeared to be the most truly indicative of educational effort. However, the need for caution and regard for economic and educational conditions when using measures of educational **effort** was made apparent.

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CHAPTER III

A DESCRIPTION OF THE COMMUNITY OF RED LAKE, ONTARIO

In the attempt to analyze the educational effort of the community under study, it was necessary to accumulate a good deal of information concerning the history, geography (both physical and economic) and demography of the area.

History. The name Red Lake is derived from an old Indian legend, which tells of a party of hunters encountering a strange, massive, hairy beast on a ledge overlooking the water's rocky shore. The hunters attacked the monster, mortally wounding it, only to have the dying animal fall into the deep waters of the lake and disappear forever. The only trace remaining was the red stain left by the beast's blood in the water.

Several outposts of rival firms such as the Hudson's Bay Company, the Northwest Company and the XY Company were located on the shores of Red Lake during the course of the fur trade in Canadian history. However, it was not until the discovery of a rich vein of gold on McKenzie Island by the Howey brothers in 1925 that the area became a point of consequence on the map of Northwestern Ontario.

When the news was released about gold the rush was soon on:

The shaggy huskies and their iron-hearted drivers are outward bound once more--outward bound on the long, hard, snow-covered trail that leads to the land of gold. On they go towards a forsaken, barren corner of Ontario, near the Manitoba border, where lies Red Lake, an isolated stretch of ice-bound water surrounded by a howling wilderness.

They believe that the hills that surround Red Lake are full of yellow gold.

Government officials who have investigated believe the strike will prove one of the richest ever made and that includes California, Yukon and the Klondike.

To get an idea of the value of the Red Lake Strike, it must be understood that mining companies can make money out of ore that assays only \$4 to the ton; that some of the richest mines average only \$3 to the ton--and the Red Lake quartz assays \$20 to the ton on a 1400 foot stretch.¹

With this promise of bonanza, Red Lake Camp mushroomed on the shores of Howey Bay and the necessary services of any civilized community began to develop.

In the almost half-century since the gold strike, Red Lake has seen good times and bad. The optimism and enthusiasm of the mining people has at times been neutralized by pessimism and apathy on the part of other residents of the community. When the industry was caught in a squeeze of rising production costs and the price ceiling for gold was fixed at \$35 (U.S.A.) an ounce, the spectre of closed mines and a ghost town was never far from the minds of Red Lake residents. The number of mines that have closed down operations in the area is greater than that of those still in production.

1950 was a year of optimism when the following newspaper report appeared:

It is an inspiring thing for a city dweller to talk to Red Lake mining and businessmen. They bubble over with confidence in the future of Canada, and especially of the mid-west area, which only in comparatively recent years has been regarded as a source of wealth for Winnipeg and the surrounding towns as well as for the whole country.²

The 1950 enthusiasm came after three new mines opened in the area during 1948 and 1949. The Corporation of the Improvement District of Balmertown was formed to administer the public affairs of the Townsites of Balmertown and Cochenour, approximately six miles northeast of Red Lake itself. Cochenour at this time was already established and the Balmertown site was adjacent to the Campbell Red Lake Mine and the New Dickenson Mine. A modern fully-serviced community of approximately 125 homes, a half-dozen business establishments and extensive recreational facilities was erected.

The new development evidently had its effect upon the minds of the people living in the hodge-podge that existed on the original site of the Red Lake Camp. In the middle 1950's, after decades of being an unorganized district, Red Lake was given the status of a town. Previous attempts at organization had met with failure due to opposition in some quarters and apathy and indifference in others. Householders were allowed to buy the lots on which their houses were built and in that way assumed some feeling of security in permanence of ownership. Some incentive to invest more in the community probably grew out of this.

An interesting feature of the history of the Red Lake District has been the manner in which the Township proper has been unable to directly benefit to the fullest extent from the boom years. The mines produce an average of \$17 million each year but are located outside the town boundaries, providing no industrial property assessment revenues. Although the town is the commercial hub of the district it has to serve as the dormitory for many unmarried mine employees. Also, nearly all the transients, unemployed and welfare cases end up in the town, which has no major industry of its own.

There are bases for a new optimism, however, and these have all appeared in the last two years. For instance, grants-in-lieu of taxes have been increased by the provincial government. The problem of policing, especially those Indians who have a drinking problem, is now handled by the Ontario Provincial Police. The new water and sewage system removes some barriers to development and the possibility of regional government raises the potential of a broader tax base. Prospects for tourism are better now that Highway 105 has been rebuilt and new mines of iron, copper, silver and zinc will add impetus to progress. "We've got to get away from this habit of just thinking about gold", is the feeling of Reeve McLeod.³

Red Lake's modern history, when updated, ends the way it

started in 1925. When a base metals discovery was made fifty miles east of the community, 400 to 500 men staked 3,000 claims. Because of the deep snows, stakers were walking the main street of Red Lake in January, 1969 offering eighty dollars for a pair of snowshoes--double the regular price.⁴

Geography. Physically, the Red Lake Mining District is situated near latitude 51 degrees north and longitude 93 degrees west in the Patricia region of the Kenora district of Northwestern Ontario. It centres on the eastern end of a twenty-mile-long lake, which provides the district's name, and furnishes much of the water supply and recreational facilities.

To the south, paved Highway 105 crosses over a hundred miles of beautiful, rolling hills and forests of evergreens, birch and poplar before meeting the Trans-Canada Highway at Vermilion Bay. From this height of land, waters drain eastward into Lake Superior, westward into Manitoba and northward into Hudson's Bay.

In winter the temperature often drops to -40 degrees Fahrenheit, while in summer the residents are beset by mosquitos and black flies. In all seasons fish and game are plentiful.

From the economic standpoint, Red Lake Township is the hub of a district which supplies a major portion of the gold for the Federal Mint. Within a radius of twenty miles are four other communities huddled close to mine tips at Madsen, McKenzie Island,

Cochenour and Balmertown. New developments are underway at greater distances, the principal one being thirty miles to the south at the Steel Company of Canada's Griffith Iron Mine at Bruce Lake. Hydro power is supplied from a generating station at Ear Falls on the Chukuni River, which drains Red Lake.

The gold mining industry is heavily subsidized by senior governments and relies heavily upon these operating grants to remain in production. Despite climbing operating costs and deteriorating grades of ore, the remaining mines have been able to remain in business and, at times, realize a modest profit. Salaries are not competitive with those paid by the International Nickel Company in Thompson, Manitoba, for instance, but rising world market prices on copper and steel have allowed the new non-gold mines to get underway and to compete more equitably in the labor market.

Forest products and commercial fishing provide further diversification from the basic gold emphasis. Tourism appears to have the best potential for making a significant contribution in boosting the economy.

Demography.

The population on all the townsites in the Red Lake area declined from 5,840 in 1963 to 5,217 in 1967. The Township of Red Lake had 2,510 population in 1967, Balmertown 1,750, McKenzie Island 263 and Madsen 694. The population turnover

in the area is very high, a 25 per cent turnover being recorded in the 1966-67 period.⁵

The above quotation presents a picture which is less than encouraging to anyone investigating possibilities in Red Lake's future. It could be said that the situation is stagnant overall.

The school population for the entire mining district hovered around the 1600 mark for the period 1966-68. The Township of Red Lake accounts for approximately forty per cent of this figure, with about 400 in the Public Elementary system, and another 135 in the Roman Catholic Separate school. Approximately 140 are enrolled in the area's composite high school where the total enrolment approaches 400.

Opportunities for young people leaving the school system are limited, as is the case in most small communities, especially those that are isolated as well. Fortunately, with a composite high school serving the entire district, the opportunity to obtain an adequate secondary education is available to all those who aspire to one.

Perhaps the most striking factor in the Red Lake District, and particularly within the boundaries of the Township itself, is the extremes to be found in the quality of housing. Where dwellings are owned by mining companies they may be quite adequate for housing, and subsidized rents may be as low as \$25

per month. Very few houses in Red Lake Township are mine-owned, so rents there are generally higher. Some more affluent residents live in modern, better-quality housing; but because of the low quality of buildings in general, people coming from other centers are not prepared to pay as much as they would elsewhere.

Transient Indian families and permanent welfare recipients are extremely poorly housed. It is, however, unlikely that these persons would be willing or able to pay regular monthly rents especially since various shacks, such as the "McDougall houses" are available at no charge.

Because the ways of life in an isolated mining community demand more of a person than is required in a larger, more central location, much emphasis is placed on sports and recreation. The young people of the district for the most part seem to regard a good education as a "ticket to the outside". The newcomers are usually temporary residents who want to make some fast money and move on.

The Ontario Department of Trade and Development summarizes the situation in Red Lake with the following information for 1968:⁷

Number of manufacturing plants	3
Number of employed in manufacturing	27
Number of plants established in last five years . .	nil
Number of plants closed in last five years	nil

Number of workers commuting to other centres (male)	382
Number of workers commuting to other centres (female)	11
Number of able-bodied unemployed (male)	10
Number of able-bodied unemployed (female)	50
Number of school graduates available per annum	82
Number employed in 44 retail establishments	150
Number employed in 12 government facilities	59
Total municipal debt.	\$220,000
Per capita municipal debt	\$88
Educational facilities	5
Secondary	1
Technical	1
Primary	2
Other	1
Hospitals	1
Number of housing units available	nil
Airways	3
Fisheries	2
Private truckers	5
Wholesalers	1
Taxi and bus transportation	5
Tourist accommodations	3

Restaurants	4
Diamond drillers	4
Electricians	1
Finance companies	1
Accountants	1
Doctors	4
Dentists	1

Red Lake possesses most of the essential services that are an integral part of any thriving settlement. What is required is some stimulus to the economy of the community that will help transform the potential into a reality of rapid growth.

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CHAPTER IV

METHODS OF COLLECTION, COMPILATION, AND APPLICATION OF DATA

I. COLLECTION OF DATA

Local wealth. From the Municipal Offices of the Town of Red Lake, copies of budgets for the years 1966 to 1968 were obtained. Assessment figures for the entire Red Lake District, including outlying centres were also provided for the same years. The chief district assessor advised that the figures represented thirty-four per cent of estimated value of real property.

Information on total personal income, per capita income, and disposable income (after deduction of personal income taxes) was obtained directly from the Department of National Revenue, Ottawa.

Educational revenue and expenditures. The Township of Red Lake, during the period investigated, was served by three different school boards. These were the Red Lake Public School Board (kindergarten to grade eight), the Red Lake High School Board and the Roman Catholic Separate School Board (for Indian children). All three were amalgamated in 1969, along with others in the general district, into one unitary board having jurisdiction over all former areas. After an interview with one

member of the new Board of Education, school enrolment figures were released. Itemized statements of revenue and expenditure for the years 1966, 1967 and 1968 for the three boards having jurisdiction within the Town boundaries were obtained through the Regional Office, Ontario Department of Education, Port Arthur (Thunder Bay).

Demographic data. Much valuable data of a demographic nature were obtained from the local library, newspaper, mining companies, chamber of commerce and municipal offices. Tourist brochures and reports of earlier studies were limited but available. The local historian, Mr. D. F. Parrot, provided another valuable source of information.

Census reports were obtained from the Dominion Bureau of Statistics for the years 1961 and 1966. The 1961 information, for the most part lacked value because of its age in relation to this study, while the 1966 figures were the result of a mini-census.

II. COMPILATION OF DATA

To aid in the analysis, raw data collected were arranged in tables or indices. The process was to present statistics reflecting demography, municipal revenue and expenditures, and school board revenue and expenditures.

The pairing of various sets of data depicting wealth, income and expenditures, in effect, created indices of educational effort.

III. APPLICATION OF DATA

The purpose of this study, as indicated earlier, was to analyze and to attempt to measure the educational effort of the Township of Red Lake, Ontario. The data have been applied in chapter five in a manner whereby effort, in each case, is the result of a comparison between some measure of expenditure with some measure of wealth or ability.

Total population, size of labor force and school enrollments were presented for the years covered in the study, and total and average personal and disposable income for each were determined. Breakdowns of sources of revenue for the municipality and the school boards were effected, along with total and net expenditures for operation where applicable.

Educational effort was expressed as a ratio of total educational expenditure and: (a) total personal income, (b) equalized assessment and (c) disposable income. It was also expressed as ratios of net operating expenditures to total personal income, equalized assessment and disposable income. In each case the degree of change in effort from year to year was indicated with

1966 as the base year.

Income elasticity of demand for education was also included as a measure of effort, and this was based on a comparison of total educational expenditures per pupil with total personal income per pupil.

A comparison of the use of current and constant dollars in the determination of effort was also attempted using total educational expenditures per pupil as a percentage of personal income per capita.

To form a composite index of effort which might readily be used for purposes of comparison with other centres in the same region, centres in other regions or with different years in the same centre, the ratio of net operating expenditures per pupil to total personal income per capita was used. This was applied in the sub-categories of: (a) instruction (salaries), (b) instructional supplies, (c) administration and (d) operation and maintenance. A scale of relative weights for each of these sub-categories was devised and determined for the base year, 1966. The system was then applied to data for the years 1967 and 1968 and an index of change in effort was evolved.

The sequential arrangement of the information gathered into indices serves to point out, in a simple and direct fashion, the most important facts about the area under study. Acceptance of

the validity of the findings are subject to the caution that estimates, where necessary, were truly as accurate as possible.

CHAPTER V

TABULATION AND ANALYSIS OF DATA

The problem of analyzing the educational effort of Red Lake has been approached in a manner which is suggested to be a logical development of data required to complete ratios which, in turn, indicate level of effort. This development proceeds as follows:

1. A presentation of pertinent demographic data;
2. A delineation of community wealth and personal income;
3. An outline of municipal and school board revenues;
4. An analysis of municipal and school board expenditures;
5. A determination of effort through the construction of various indices utilizing combinations of selected data.

I. DEMOGRAPHIC DATA

Acquiring accurate demographic data was of major importance in this study because the determination of effort levels depended heavily upon this information for validity. Where exact figures were not available careful estimates were made, taking into consideration all related data.

The population totals presented in Table I were acquired

TABLE I

COMPARISONS OF TOTAL POPULATION, LABOR FORCE
AND SCHOOL ENROLMENT: RED LAKE, ONTARIO

	(A) Total population	(B) Labor force	(C) School enrolment	(D) Per cent B is of A	(E) Per cent C is of A	(F) Per cent C is of B
1961	2,568	783	691	30.49	26.91	88.25
1962	2,643					
1963	2,666					
1964	2,755					
1965	2,510	921	671	36.69	26.73	72.86
1966	2,523	1,019	681	43.95	26.99	66.83
1967	2,510	1,101	691	43.86	27.53	62.76
1968	2,510*	1,154*	686	45.97	27.33	59.44

Sources: Area Assessment Office, Red Lake.
Red Lake Board of Education
Department of National Revenue, Ottawa.
*Estimates based on average growth (1961-67).

from the area assessment office in Red Lake and represent actual head-counts for the years 1961 through 1967. The figure, 2510, was chosen as the estimate for 1968 because it had appeared in the previous year, 1967, and again in 1965. It was felt that 2510 best reflected population fluctuation during the period in question.

The labor force size for the years 1965 to 1967 was determined by using totals of tax returns submitted to the Department of National Revenue. The 1961 figure of 783 was provided in census data for that year gathered by the Dominion Bureau of Statistics. The estimate of 1154 for 1968 was formed by calculating the average growth from 1961 to 1967.

School attendance data was provided by the assessment office and the Red Lake Board of Education. Actual September enrolment figures were used.

In Table I, Column D indicates a steady growth in the percentage the labor force formed of the total population, from 30.49 per cent in 1961 to an estimated 45.97 per cent in 1968. This reflects the situation whereby the Red Lake Township facilities were being used more each year as a dormitory for miners employed outside the town boundaries.

Column E in Table I shows almost no change in the relationship between school enrolment and total population. Both cate-

gories declined slightly in number over the period 1961 to 1968.

With the labor force expanding steadily and the school enrolment relatively static, the ratio changed significantly with school enrolment falling from 88.25 per cent of labor force in 1961 to an estimated 59.44 per cent in 1968.

From the data presented in Table I it may be concluded that the burden on the total population represented by total number of pupils remained relatively static over the period under study. It also may be concluded that the ability to support education rose with the increased total personal income as the ranks of the labor force swelled.

II. COMMUNITY WEALTH AND INCOME

As stated in the second chapter of this study, in regard to a review of pertinent literature, personal income and real property owned are perhaps the two most readily accepted criteria for measuring wealth and ability to support education. The Township of Red Lake received several annual grants to supplement its efforts toward necessary expenditures and these aids from senior governments are here also considered as a form of wealth or income.

Personal income. With the assumption that personal income as reported to the Department of National Revenue would be a valid

indication of ability to support education, these data were then considered in two ways. The first was to compile total personal income before federal and provincial taxes, while the second was to use disposable income, the part remaining immediately after these taxes were deducted. These totals were further analyzed to determine averages per member of the labor force, per pupil enrolled in schools and per capita of the total town population. Degree of change from year to year was also compiled with 1966 used as a base of one hundred.

Table II, which contains data on total personal income, shows a steady growth rate in this category. The total for 1968 was estimated on the basis of average increase in the years immediately preceding. The average annual income per member of the labor force rose from \$3,727 in 1965 to an estimated \$4,851 in 1968, slightly more than eight per cent per annum.

When income is applied to the two other elements, school population and town population, the growth rates are comparatively higher. The average per pupil rises from \$5,116 in 1965 to \$8,634 in 1968, about eighteen per cent per annum. A similar rate of increase is experienced in the average per capita category where the 1965 figure of \$1,368 per citizen swells to an estimated \$2,360 in 1968.

When personal disposable income is considered, the dollar

TABLE II

TOTAL PERSONAL INCOME:
RED LAKE, ONTARIO

	Total personal income	Average per worker	Change 1966 =100	Average per pupil	Change 1966 =100	Average per capita	Change 1966 =100
1965	\$3,433,000	\$3,727	84.67	\$5,116	77.67	\$1,368	76.94
1966	4,486,000	4,402	100.00	6,587	100.00	1,778	100.00
1967	5,093,000	4,626	105.09	7,370	111.89	2,029	114.12
1968	5,923,000*	4,851	110.20	8,634	131.08	2,360	132.73

Source: Department of National Revenue, Ottawa.

*Estimate based on Average growth: 1965-1967.

figures are, of course, slightly lower. As shown in Table III, the average per worker for the period 1965 to 1968 changes from \$3,377 to an estimated \$4,208. Per pupil averages for the same years range from \$4,635 to \$7,490 and per capita averages run from \$1,239 to \$2,047. The rates of growth in disposable income are also slightly lower, but the trend is very similar to that of growth indicated in Table II for total income before taxes.

Municipal revenues. As a measure of wealth in the community total municipal revenues are presented in Table IV. The smallest source area of revenue, which never rose above \$21,334 during the period under study, is listed as "other revenue" in the table. This involved miscellaneous items such as fines, dog licences, building permits and office rentals. The percentage of total municipal revenue represented by this category was a high of 7.42 in 1966 and a low of 5.58 in 1967.

The major source of revenue for the municipality was the tax levy on real property. The approximate increase over the three year period was ten per cent. However, this increasing dollar figure also represented a decreasing percentage of total revenue. This was because of the variable of government grants in lieu of taxes, which was increasing at a higher rate.

The tax levy constituted 69.12 per cent of total revenue

TABLE III
TOTAL PERSONAL DISPOSABLE INCOME

	Total personal disposable income	Average per worker	Change 1966 =100	Average per pupil	Change 1966 =100	Average per capita	Change 1966 =100
1965	\$3,110,000	\$3,377	85.69	\$4,635	78.60	\$1,239	77.83
1966	4,016,000	3,941	100.00	5,897	100.00	1,592	100.00
1967	4,462,000	4,053	102.84	6,457	109.50	1,778	111.68
1968	5,138,000*	4,208	106.77	7,490	127.01	2,047	128.58

Source: Department of National Revenue, Ottawa.
*Estimate based on average growth (1965-67).

TABLE IV

TOTAL REVENUES: CORPORATION OF THE TOWNSHIP
OF RED LAKE, ONTARIO

	1965	per cent	1966	per cent	1967	per cent	1968	per cent
Tax levy on real property	\$183,417	69.12	\$202,625	71.45	\$210,163	66.45	\$203,593	58.66
Grants in lieu of taxes	63,948	24.10	59,937	21.13	88,469	27.97	122,136	35.19
Other revenue	18,005	6.78	21,037	7.42	17,625	5.58	21,334	6.15
Total	\$265,370	100.00	\$283,600	100.00	\$316,257	100.00	\$347,063	100.00

Source: Budgets of Council: Red Lake.

in 1965 while grants made up 24.10 per cent. A higher levy in 1966, coupled with a lower grant income for that year alone, permitted the property assessment revenue to represent 71.45 per cent of total revenue while grants dropped to 21.13 per cent. However, the local levy, although increasing in dollars, slipped to 58.66 per cent in 1968 while the grants climbed to 35.19 per cent of total revenue. This appeared to indicate a trend of increasing external aid to compensate for a somewhat static local tax base.

Table V itemizes types and sizes of grants for the years 1965 through 1968. Some important features are indicated by a comparison of amounts from year to year. Recreation is a very important part of life in an isolated community and this grant was more than doubled by 1968 over 1965. The grant for conservation of health was almost doubled during the same period. The mining municipality grant was more than tripled, perhaps indicating a form of compensation for the growing role of dormitory for the region's commuting labor force which the town was assuming.

In 1968 there was also an unconditional per capita grant, totalling \$12,602, which had never before been received. From 1965 to 1968 the total size of grants from senior governments almost doubled from \$63,948 to \$122,136.

TABLE V
TOWNSHIP OF RED LAKE MUNICIPAL REVENUE:
GRANTS IN LIEU OF TAXES

	1965	1966	1967	1968
1. Unconditional per capita grant				\$12,602
2. Mining municipality grant	\$17,775	\$17,775	\$58,575	60,727
3. Highways grant	11,200	13,213	16,800	16,176
4. Conservation of health grant	820	100	500	1,528
5. Welfare assistance	17,200	20,287	8,500	16,345
6. Child welfare	13,650	4,669	1,880	8,516
7. Recreation grant	1,900	2,471	2,200	5,582
8. Sundry grants	1,403	1,420	14	157
Total	\$63,948	\$59,937	\$88,469	\$122,136

Source: Budgets of Council: Red Lake.

Municipal expenditures. The contribution made through the town council to school support is of major importance in this study and is shown in Table VI. In 1965 funds turned over by the municipality to local school boards constituted 27.33 per cent of total municipal expenditures. This percentage increased regularly until it stood at 42.05 per cent for 1968. On an index scale based on 1966 = 100, the increase was over forty-three points, rising from 87.29 in 1965 to 130.35 in 1968. As total municipal expenditures rose twenty-one percent in the 1965-1968 period for an average of seven per cent per annum, town council contributions to school boards rose eighty-seven per cent or at an average of twenty-nine per cent per annum.

III. SCHOOL BOARD REVENUE AND EXPENDITURE

Revenue. Table VII presents the sources of school board revenue. Although Red Lake was served by three different school boards simultaneously during the period under study, revenues for each year are totalled for all three because the sources of support were common to all boards. A more detailed consideration of activities of individual boards is made in a later table on expenditures.

According to information presented in Table VII, total revenue had risen about one third in the two year period from

TABLE VI

COMPARISONS OF EDUCATIONAL EXPENDITURES WITH MUNICIPAL EXPENDITURES:
RED LAKE TOWN COUNCIL (1966=100)

	1965	1966	1967	1968
Total municipal expenditures	\$275,465	\$307,745	\$324,406	\$332,981
Total municipal expenditures on education	75,290	96,353	125,326	140,029
Per cent municipal expenditures on education are of total municipal expenditures	27.33%	31.31%	38.63%	42.05%
Increase in ratio (1966=100)	87.29	100.00	123.38	130.35

Sources: Budgets of Council: Red Lake.
Budgets of School Boards: Red Lake.

TABLE VII
SCHOOL BOARD REVENUE SOURCES

	Total revenue	Provincial grants	% of total	Local levy	% of total	Other revenue	% of total
1966	\$290,783	\$186,113	64.00	\$ 96,353	33.14	\$8,317	2.86
1967	357,728	222,603	62.23	125,326	35.03	9,799	2.74
1968	401,629	256,771	63.93	140,029	34.87	4,829	1.20

Sources: Budgets of Council, Red Lake.
Budgets of School Boards, Red Lake.

1966 to 1968. Provincial foundation grants appear to have remained rather steady as a percentage of total revenue. There was a slight decrease to 62.23 per cent in 1967 from 64.00 per cent in 1966, but this rose back to 63.93 per cent in 1968.

However, in dollars, this period saw a continued increase with the grant for 1968 being approximately one third more than in 1966.

The local levy rose in percentage from 33.14 in 1966 to 35.03 in 1967 and dropped slightly to 34.87 in 1968. This is somewhat misleading for the local contribution did rise steadily and substantially over the two years to a point where the 1968 figure stood almost forty-six per cent higher than the one for 1966. The other sources of revenue, such as rentals, interest charges and private donations represented a very small percentage of the total. From a figure of 2.86 per cent in 1966, they dropped to 1.20 per cent in 1968.

That portion of school board revenue that originated in the local property tax levy is broken down into per capita, per worker and per pupil sub-equivalents in Table VIII. The levy per capita rose from \$30.00 in 1965 to \$55.78 in 1968. This indicated an increase of almost sixty-nine points on the index scale as compared with approximately fifty-nine points increase

TABLE VIII

SUB-EQUIVALENTS OF SCHOOL BOARD REVENUE FROM LOCAL LEVY

	Total local tax levy	Levy per capita	Change 1966 =100	Levy per worker	Change 1966 =100	Levy per pupil	Change 1966 =100
1965	\$ 75,290	\$30.00	78.55	\$ 81.75	86.45	\$112.21	79.31
1966	96,353	38.19	100.00	94.56	100.00	141.49	100.00
1967	125,329	49.93	130.74	113.83	120.38	181.37	128.19
1968	140,029	55.78	146.06	121.34	128.32	205.58	145.30

in total per capita income during the same period, as shown in Table II.

The average levy per member of the labor force rose 41.87 points from \$81.75 in 1965 to \$128.32 in 1968. In the same period of three years the average levy per pupil rose from \$112.21 to \$205.58, or about sixty-six points on the scale. This represents an average rise of twenty-eight per cent per year.

Expenditures. In the measurement of educational effort, school board expenditures form a most important variable in the construction of ratios. Table IX lists total educational expenditures for all boards serving Red Lake Township for the years 1966, 1967 and 1968. These are also shown as per capita, per worker and per pupil amounts.

Using 1966 as the base year, per capita expenditures rose 55.63 points on the index, close to an average of twenty-eight points each year including 1968. For comparison the Dominion Bureau of Statistics' all-item consumer price index rose at an average annual rate of 3.7 per cent from the beginning of 1965 to the end of 1969.¹

Expenditures per pupil rose 54.06 points on the index for the period under study, from \$444.70 in 1966 to \$685.11 in 1968. Unlike the town population and school enrolment figures, the

TABLE IX

TOTAL EDUCATIONAL EXPENDITURES:
ALL RED LAKE SCHOOL BOARDS

	Total educational expenditures	Expenditures per capita	Change 1966 =100	Expenditures per worker	Change 1966 =100	Expenditures per pupil	Change 1966 =100
1966	\$302,840	\$120.32	100.00	\$297.19	100.00	\$444.70	100.00
1967	382,531	152.40	126.66	347.44	116.91	553.59	124.49
1968	469,988	187.25	155.63	407.27	137.04	685.11	154.06

labor force total did increase; nevertheless expenditures per worker rose 37.04 points during the two year period.

Table X contains data showing trends in school spending on the part of the individual boards. The non-vocational sector of the composite high school saw spending levels increase an average fifteen points per annum with the index standing at 129.09 in 1968, based on 1966 = 100. The vocational area spending almost quadrupled during the same period to an index level of 376.67 in 1968. In dollars this was \$21,357 in 1966 increasing quickly to \$80,445 in 1968. Public elementary spending rose 53.49 index points in the 1966-1968 period while the Roman Catholic Separate school increased expenditures only 22.81 points.

It should be noted that per pupil expenditures may not have been rising as quickly in the separate school as in the public elementary school, but were already higher. For instance, in 1967 the public elementary expenditures were \$154,542 for an enrolment of 405 pupils for an average of \$382 per pupil. The separate school spent, in the same year, \$61,534 for an enrolment of 139 and an average of \$443 per pupil.

Net operating expenditures, for the purpose of this study, include instructional salaries, instructional supplies, administration costs and costs of operation and maintenance. They exclude such items as capital building expenditures, debt reduction

TABLE X

DISTRIBUTION OF EDUCATIONAL EXPENDITURES BY
INDIVIDUAL RED LAKE SCHOOL BOARDS

	Composite high non- vocational	Change 1966 =100	Composite high vocational	Change 1966 =100	Public elementary school	Change 1966 =100	Roman Catholic separate	Change 1966 =100
1966	\$101,654	100.00	\$21,357	100.00	\$122,309	100.00	\$57,480	100.00
1967	118,549	116.62	47,906	224.31	154,542	126.35	61,534	107.05
1968	131,227	129.09	80,445	376.67	187,727	153.49	70,589	122.81

payments and transportation charges. Net operating expenditures for the three boards as a group are presented in Table XI showing per capita, per worker and per pupil equivalents as well as trends of change.

Per capita spending rose in 1968 to 44.47 points on the index scale over the base of 100 for 1966. The dollar figure of \$91.48 rose to \$132.16 in the same period. Expenditure per worker rose 26.95 points and expenditure per pupil rose 42.72 points. Per pupil net operating expenditures rose from \$338.80 in 1965 to \$483.55 in 1968.

Another example of school board net operating expenditures comes in Table XII, which lists 1968-1969 pay ranges for degree teachers with the equivalent of a Manitoba Class 4 standing, and takes samples from a half-dozen centres across Canada. The lowest sample salaries listed are in Toronto and the highest are in Red Lake, both in the Province of Ontario.

IV. MEASURES OF EFFORT

In this attempt to analyze the educational effort of Red Lake, several approaches were taken with the assumption that some or all of these would result in valid and reliable measures of effort. The variables of burden, ability and expenditures presented to this point are here utilized as numerators and denomi-

TABLE XI *

NET OPERATING EXPENDITURES: ALL RED LAKE SCHOOL BOARDS

	Total net operating expenditures	Expenditure per capita	Change 1966 =100	Expenditure per worker	Change 1966 =100	Expenditure per pupil	Change 1966 =100
1966	\$230,722	\$ 91.48	100.00	\$226.42	100.00	\$338.80	100.00
1967	276,803	110.28	120.55	251.41	111.04	400.58	118.23
1968	331,716	132.16	144.47	287.45	126.95	483.55	142.72

TABLE XII
EXAMPLES OF 1968-1969 PAY RANGES
FOR DEGREE TEACHERS: EQUIVALENT
MANITOBA CLASS 4

LOCATION	MINIMUM	MAXIMUM
WINNIPEG	\$6,800	\$10,900
TORONTO	6,400	9,400
SASKATOON	6,500	10,600
CALGARY	6,650	10,900
VANCOUVER	6,850	10,360
RED LAKE, ONTARIO	7,300	11,400

Sources: Red Lake News
East Kildonan Examiner

nators in forming ratios to indicate effort.

Income elasticity of demand for education. The ratio of the percentage increase in expenditures on education to a one per cent increase in income indicates a measure of effort. This demonstrates the elasticity of demand for education, and level of effort rises and falls with the demand.

Table XIII, for the period 1966-1967, shows a percentage increase in income per pupil of 14.17. In the same period total educational expenditures increased 24.49 per cent. The increase in demand outstripped the increase in ability creating a coefficient of elasticity of 1.73. The result for the 1967-1968 period showed a coefficient of elasticity of 1.46. When the overall period of 1966 to 1968 was considered the result was 1.65. This is an indication that considerable demands were made by education on rising income during the period studied.

Current and constant dollars. Table XIV compares educational effort using current and constant dollars and, in that way, takes into consideration the effect of an inflating economy on effort. Total personal income per capita and total expenditures per pupil are presented in columns (2) and (3) in terms of what they were worth at the time received or spent. In columns (5) and (6) they are translated through reference to the consumer

TABLE XIII

INCOME ELASTICITY OF DEMAND FOR EDUCATION BASED ON
TOTAL EDUCATIONAL EXPENDITURES PER PUPIL AND
TOTAL PERSONAL INCOME PER PUPIL

Period	Percentage increase in income per pupil	Percentage increase in expenditures per pupil	Coefficient of elasticity
1966-67	14.17%	24.49%	1.73
1967-68	16.31	23.76	1.46
1966-68	32.73	54.06	1.65

TABLE XIV

EDUCATIONAL EFFORT MEASURED IN TERMS OF TOTAL PERSONAL INCOME PER CAPITA
AND TOTAL EDUCATIONAL EXPENDITURES PER PUPIL:
IN CURRENT AND CONSTANT DOLLARS

	(1) Consumer price index	(2) Total personal income per capita (current \$)	(3) Total educational expenditures per pupil (current \$)	(4) Effort index $(3) \div (2)$	(5) Total personal income per capita (constant \$)	(6) Total educational expenditures per pupil (constant \$)	(7) Effort index $(6) \div (5)$
1966	100.0	\$1,778	\$444.70	.2501	\$1,778	\$444.70	.2501
1967	103.6	2,029	553.59	.2728	1,958	534.35	.2729
1968	107.9	2,360	685.11	.2903	2,187	634.81	.2903

price index, in column (1), into 1966 dollars. The resulting effort indices in columns (4) and (7) are identical within one-tenth of one per cent, and show that inflation has no noticeable effect on effort because effort is a ratio of two elements that are both exposed to the same degree of inflation.

What is of prime significance, and pertinent to this study, is the growth in level of effort indicated by this table. The effort index rose from .2501 in 1965, through .2728 in 1967, to .2903 in 1968, measured in current dollars.

Total educational expenditures and total personal income.

Table XV shows educational effort indices determined by ratios of total educational expenditures to total personal income. The effort index of .0675 for 1966 indicates that the citizens of Red Lake spent approximately six and three-quarters per cent of their total personal income on education in that year. In 1968 this rose to 7.93 per cent and an increase of 17.48 points over the 1966 base of one hundred.

An interesting feature of a comparison of total personal income and total educational expenditure is a translation of data into man-days worked on behalf of those enrolled in the schools. Using the data for total personal income, total educational expenditures and basing the work year on a figure of

TABLE XV

EDUCATIONAL EFFORT MEASURED IN TERMS OF TOTAL EDUCATIONAL
EXPENDITURES AND TOTAL PERSONAL INCOME

	Total educational expenditures	Total personal income	Effort index	Change when (1966=100)
1966	\$302,840	\$4,486,000	.0675	100.00
1967	382,531	5,093,000	.0751	111.26
1968	469,988	5,923,000*	.0793	117.48
$\frac{\text{Total educational expenditure}}{\text{Total personal income}} = \text{Effort index}$				

*Estimated

260 days, it was found that the average worker spent 17.55 days of labor in support of schools in 1966. This increased to 19.53 days in 1967 and reached a level of 20.62 days in 1968.

Total educational expenditures and equalized assessment:

The levels of effort tabulated in Table XVI were derived from ratios of total educational expenditure and equalized assessment. Annual increases in effort are indicated as growth in the sense that they proceeded from a low of .1463 in 1966 to a high of .2204 in 1968. Net gain was .0741 and average annual increase was .03705. This also indicates that educational expenditures were increasing more rapidly than equalized assessment. Equalized assessment, for that matter, dropped slightly in 1968 from 1967.

What is also indicated is that Red Lake increased its spending on education from just under fifteen per cent of the value of its total equalized assessment in 1966 to a point where it was spending more than twenty-two per cent of the value of equalized assessment in 1968. The increase over the two years, based on 1966 = 100, was 50.65 points.

Table XVII translates the gross figures of Table XVI into a per pupil basis with, of course, the ratios remaining the same. This provides still another measure of effort at a level which facilitates comparisons.

TABLE XVI

EDUCATIONAL EFFORT MEASURED IN TERMS OF TOTAL EDUCATIONAL
EXPENDITURES AND EQUALIZED ASSESSMENT

	Total educational expenditures	Equalized assessment	Effort index	Change 1966 =100
1966	\$302,840	\$2,070,623	.1463	100.00
1967	382,531	2,137,239	.1790	122.35
1968	469,988	2,132,682	.2204	150.65

$$\frac{\text{Total educational expenditure}}{\text{Equalized assessment}} = \text{Effort index}$$

Sources: Red Lake Area Assessment Office.
Ontario Department of Education.

TABLE XVII

EDUCATIONAL EFFORT MEASURED IN TERMS OF EDUCATIONAL EXPENDITURE PER PUPIL
AS A PERCENTAGE OF EQUALIZED ASSESSMENT PER PUPIL

	Educational expenditure per pupil	Equalized assessment per pupil	Effort index	Change 1966 =100
1966	\$444.70	\$3,040.56	.1463	100.00
1967	553.59	3,092.97	.1790	122.35
1968	685.11	3,108.87	.2204	150.65
$\frac{\text{Educational expenditure per pupil}}{\text{Equalized assessment per pupil}} = \text{Effort index}$				

Total educational expenditure and disposable personal income. Educational effort is measured in Table XVIII in terms of total educational expenditure and disposable personal income. Expenditures rose approximately fifty per cent over the period 1966-1968 while disposable personal income rose an estimated twenty-five per cent in the same period, roughly one million dollars. The effort index indicates an increase from .0754 in 1966 to .0915 as an estimate for 1968. This also indicates that total educational expenditures accounted for about seven and one half per cent of disposable income in 1966, and rose to over nine per cent in 1968. Based on a scale of 1966 = 100, the increase to 1968 was 21.35 points.

Net operating expenditure and total personal income. In Table XIX net operating expenditure and total personal income are used to measure educational effort. Net operating expenditures rose almost forty-four per cent during the period 1966-1968 for an average of approximately twenty-two per cent per annum. Total personal income rose slightly over thirty-one per cent during the same period for an estimated fifteen to sixteen per cent average annual gain. The effort index rose from .0514 in 1966 to .0560 in 1968 showing an average annual gain of only .0023 per annum. This means that net operating expenditures

TABLE XVIII

EDUCATIONAL EFFORT MEASURED IN TERMS OF TOTAL EDUCATIONAL
EXPENDITURE AND DISPOSABLE PERSONAL INCOME

	Total educational expenditures	Total disposable personal income	Effort index	Change when 1966 = 100
1966	\$302,840	\$4,016,000	.0754	100.00
1967	382,531	4,462,000	.0857	113.66
1968	469,988	5,138,000*	.0915	121.35
$\frac{\text{Total educational expenditures}}{\text{Total disposable income}} = \text{Effort index}$				

*Estimate based on average growth (1965-67).

Sources: Department of National Revenue, Ottawa.

Ontario Department of Education, Thunder Bay.

TABLE XIX

EDUCATIONAL EFFORT MEASURED IN TERMS OF NET OPERATING
EXPENDITURE AND TOTAL PERSONAL INCOME

	Net operating educational expenditure	Total personal income	Effort index	Change when 1966 = 100
1966	\$230,722	\$4,486,000	.0514	100.00
1967	276,803	5,093,000	.0543	105.64
1968	331,716	5,923,000	.0560	108.95
$\frac{\text{Net operating expenditure}}{\text{Total personal income}} = \text{Effort index}$				

*Estimate based on average growth (1965-67)

formed slightly over five per cent of total personal income in Red Lake in 1966 and rose approximately one half of one per cent by 1968. On a 1966 = 100 base, the increase over the period to 1968 was 8.95 points.

Net operating expenditures and equalized assessment.

Indices of educational effort based on ratios of net operating educational expenditures to equalized assessment are shown in Table XX. As net operating expenditures rose approximately twenty-two per cent per annum from 1966 to 1968, equalized assessment hovered slightly above the \$2,000,000 mark for all three years. From \$2,070,623 in 1966 it rose approximately \$67,000 in 1967, then dropped back almost \$5,000 in 1968. The 1968 total represents a net gain of less than three per cent over 1966.

The index effort ratio stood at .1114 in 1966 and climbed to .1555 in 1968. This indicates that net operating expenditures constituted 11.14 per cent of equalized assessment in 1966 and this rose to 15.55 per cent in 1968, for an average annual gain of almost 2.21 per cent. Based on 1966 = 100, the rise on the effort scale was 39.59 points.

Net operating expenditures and disposable personal income.

While net operating expenditures rose almost forty-four per cent from 1966 to 1968, disposable personal income rose approximately

TABLE XX

EDUCATIONAL EFFORT MEASURED IN TERMS OF NET OPERATING
EXPENDITURES AND EQUALIZED ASSESSMENT

	Net operating educational expenditures	Equalized assessment	Effort index	Change when 1966 = 100
1966	\$230,722	\$2,070,623	.1114	100.00
1967	276,803	2,137,239	.1295	116.25
1968	331,716	2,132,682	.1555	139.59
$\frac{\text{Net educational operating expenditures}}{\text{Equalized assessment}} = \text{Effort index}$				

twenty-five per cent in the same period. This is shown in Table XXI. The effort index based on the ratio between these two categories indicates growth from .0575 in 1966 to .0646 in 1968. This shows a rise of .0071, less than three quarters of one per cent during the period, or an increase of 12.35 points by 1968 on a scale based on 1966 = 100.

It is also indicated that net operating expenditures for Red Lake schools rose from 5.75 per cent of disposable personal income in 1966 to 6.46 per cent in 1968.

V. A COMPOSITE INDEX

To this point in this chapter, several methods of determining educational effort have been suggested. Their application to the effort of Red Lake has been demonstrated through the use of ratios based on comparisons of data pertaining to that community.

However, in order to assign an effort factor or number which can provide an easily understood comparison for those responsible for the finance of education in any community, the wealth of data available must be applied in a composite index. Any ratio of effort based on comparisons between income and expenditures should be applicable to the composite index. In this instance the ratio of net educational operating expenditure per pupil to the

TABLE XXI

EDUCATIONAL EFFORT MEASURED IN TERMS OF NET OPERATING
EXPENDITURES AND DISPOSABLE PERSONAL INCOME

	Net operating educational expenditures	Disposable personal income	Effort index	Change when 1966 = 100
1966	\$230,722	\$4,016,000	.0575	100.00
1967	276,803	4,462,000	.0620	107.83
1968	331,716	5,138,000*	.0646	112.35
$\frac{\text{Net operating educational expenditures}}{\text{Disposable personal income}} = \text{Effort index}$				

*Estimated

total personal income per capita is used as the example.

To begin, as indicated in Table XXII, the four expenditure categories included in net operating expenditures in this study are each itemized and expressed as percentages of their total. They are presented on a per pupil basis for each of the years 1966, 1967 and 1968. For instance, the cost of instruction is shown to have risen from \$239.78 per pupil in 1966 to \$351.01 in 1968. Although the increase in expenditures in this category over the period under study was approximately fifty per cent, the percentage instruction formed of all net operating expenditures rose slightly from 70.77 per cent in 1966 to 73.62 per cent in 1968.

Instructional supplies expenditures rose from \$29.17 per pupil in 1966 to \$38.51 per pupil in 1968 out constituted a declining percentage of total operating costs, falling from 8.61 per cent in 1966 to 7.96 per cent in 1968. Expenditures on administration and maintenance essentially followed the same pattern as supplies during the period; that is rising in individual amounts from year to year, out falling in general in overall percentage of the total. This would indicate that the substantial rise in instructional salaries minimized the effect of any fluctuations in the other three categories.

The results of converting the information presented in

TABLE XXII

COSTS OF INSTRUCTION, SUPPLIES, ADMINISTRATION AND MAINTENANCE
AS PERCENTAGES OF NET OPERATING EXPENDITURES:
ALL SCHOOL BOARDS

	Total	Instru- ction	% of total	Supplies	% of total	Admini- stration	% of total	Mainte- nance	% of total
<u>1966</u> ...	\$230,722	\$163,291	70.77	\$19,864	8.61	\$12,845	5.57	\$34,722	15.05
Per pupil..	\$338.80	\$239.78		\$29.17		\$18.86		\$50.99	
<u>1967</u> ...	\$276,803	\$199,704	72.15	\$22,502	8.13	\$19,705	7.12	\$34,892	12.60
Per pupil..	\$400.58	\$289.01		\$32.56		\$28.52		\$50.49	
<u>1968</u> ...	\$331,716	\$244,225	73.62	\$26,415	7.96	\$18,358	5.53	\$42,718	12.89
Per pupil..	\$483.55	\$356.01		\$38.51		\$26.76		\$62.27	

Table II and Table XXII into ratios of net educational expenditures per pupil and total personal income per capita are shown in the next step, Table XXIII. This table indicates that operating expenditures were equivalent to 19.1 per cent of total personal income in Red Lake in 1966 and that this rose to 19.7 per cent in 1967, before continuing on to form 20.5 per cent in 1968.

Of these total operating expenditures, instructional salaries equalled 13.5 per cent of total personal income in 1966 and rose to 15.2 per cent in 1968. Instructional supplies remained steady at 1.6 per cent over the 1966-1968 period, while administrative expenditures remained at 1.1 per cent in 1966 and 1968, with a slight increase to 1.4 per cent in 1967. Operation and maintenance percentages declined from 2.9 per cent in 1966 to 2.5 per cent in 1967, before rising slightly to 2.6 per cent in 1968. Once again the relative importance of instructional salaries is clearly demonstrated.

Table XXIV provides a system of weighting the four expenditure categories used in this study. 1966 is considered the base year mainly because it was the first year in the series for which sufficient information was available to construct this type of a table. The weighting system determines the relative importance of instructional salaries, instructional supplies, administration, and operation and maintenance by their cost to

TABLE XXIII

NET EDUCATIONAL OPERATING EXPENDITURE PER PUPIL AS A RATIO
OF TOTAL PERSONAL INCOME PER CAPITA

	1966	1967	1968
(1) <u>Net educational operating expenditure per pupil</u> Total personal income per capita	.191	.197	.205
(2) <u>Net expenditure on instruction per pupil</u> Total personal income per capita	.135	.142	.152
(3) <u>Net expenditure on instructional supplies per pupil</u> Total personal income per capita	.016	.016	.016
(4) <u>Net expenditure on administration per pupil</u> Total personal income per capita	.011	.014	.011
(5) <u>Net expenditure on maintenance per pupil</u> Total personal income per capita	.029	.025	.026

TABLE XXIV

EDUCATIONAL EFFORT CALCULATED BY WEIGHTED EXPENDITURE CATEGORY: 1966

	(1) Percentage of total net expenditure	(2) Assigned relative weight	(3) <u>Expend/pupil</u> <u>Income/capita</u>	(4) Column (2)x(3)
Instructional salaries . . .	70.77	7.077	.135	.95536
Instructional supplies . . .	8.61	0.861	.016	.01378
Administration	5.57	0.557	.011	.00613
Operation and maintenance . .	15.05	1.505	.029	.04365
Total	100.00	10.0		1.01892

Weighted average = $\frac{1.01892}{10} = .101892$ (or 10.19 per cent)

the school boards in 1966. No attempt is made in this study to justify the appropriateness of the expenditures by category.

The weighted average of the categories has been derived, for 1966 in Table XXIV, by multiplying each expenditure ratio by its relative weight, summing the result of the categories, and dividing by the sum of the weights used. The weighted average in 1966, expressed as a percentage, is 10.19 per cent. This was determined by following a system of weighting explained by Neter and Wasserman.²

Table XXV presents the Township of Red Lake educational effort, 1966 to 1968, as weighted averages and as index numbers using 1966 as base 100. The indication is that effort was increasing during the period under study at an average rate of 7.85 per cent per annum, when calculated in terms of net educational operating expenditures per pupil and total personal income per capita.

Other composite indices of effort could also be constructed for the period studied, utilizing ratios formed with different expenditure categories for the numerator or different wealth and income categories for the denominator. Many of these have appeared in the form of general indices earlier in this chapter. If the pattern is followed closely, simple substitution and calculation of data is all that is necessary.

TABLE XXV

EDUCATIONAL EFFORT OF THE TOWNSHIP OF RED LAKE, 1966-1968,
EXPRESSED AS WEIGHTED AVERAGES AND AS
INDEX NUMBERS (BASE 1966 = 100)

	Weighted average (per cent)	Effort index
1966	10.19	100.00
1967	10.79	105.88
1968	11.79	115.70

VI. INDICES OF LOCAL EFFORT

In Table VII, which shows sources of school board revenue, it was indicated that the local levy constituted approximately one-third of the total received. As this category most closely represents actual local contribution to education, it appeared desirable to form final ratios of effort by utilizing local levy as a numerator with assessment and personal income as denominators.

Table XXVI shows the local levy per pupil rounded to the nearest dollar for the period 1966-1968. The levy rose about forty-six per cent from \$141 in 1966 to \$206 in 1968, while personal income per pupil grew an estimated thirty-one per cent in the same time. Although a growth in percentage of effort of 14.95 is indicated in 1967 over 1966, there appears to be a slight decrease to 11.68 in 1968. In any case, an increase in effort of at least 11.68 per cent is indicated for the period under study. What is more, the reduced figure for 1968 could be inaccurate as the total personal income per pupil for that year was only estimated.

Table XXVII incorporates ratios of local levy per pupil and equalized assessment per pupil in attempting to indicate local effort. This time, as the local levy per pupil rose about forty-six per cent during the period 1966-68, the equalized

TABLE XXVI

LOCAL EFFORT MEASURED IN TERMS OF LOCAL LEVY PER PUPIL
AND TOTAL PERSONAL INCOME PER PUPIL

	Local Levy per pupil	Total personal income per pupil	Effort index	Change when 1966=100
1966	\$141	\$6,587	.0214	100.00
1967	181	7,370	.0246	114.95
1968	206	8,634*	.0239	111.68
$\frac{\text{Local levy per pupil}}{\text{Total personal income per pupil}} = \text{Effort index}$				

*Estimated

TABLE XXVII

LOCAL EFFORT MEASURED IN TERMS OF LOCAL LEVY PER PUPIL
AND EQUALIZED ASSESSMENT PER PUPIL

	Local levy per pupil	Equalized assessment per pupil	Effort index	Change when 1966=100
1966	\$141	\$3,041	.0464	100.00
1967	181	3,093	.0585	126.08
1968	206	3,109	.0663	142.89
$\frac{\text{Local levy per pupil}}{\text{Equalized assessment per pupil}} = \text{Effort index}$				

assessment per pupil rose only 2.24 per cent. In terms of the categories used in this table the local effort increased 42.89 per cent in two years.

When revenue from grants-in-aid and miscellaneous sources is included for the purpose of determining total effort, comparisons can be made as in Table XXVIII. With personal income as a common denominator, the local effort increase over the period 1966-68 is an estimated 11.68 per cent while the more general effort increase, including grants, is 16.07. In the equalized assessment category, the effort increase is 42.89 per cent with the local levy and 50.65 per cent when grant revenue is added. A definite increase in local effort is indicated while it would appear that this is further supplemented by outside sources.

VII. SUMMARY

Chapter V has shown the development of what are proposed to be several methods of measuring effort for elementary and secondary education, at the community level, for any given year or number of years.

The data collected and presented for the study of educational effort have included demographic factors such as population, labor force and school enrolment. Community wealth and ability criteria included personal income, real property assess-

TABLE XXVIII

COMPARISONS OF GROWTH IN LOCAL EFFORT WITH AND WITHOUT
THE INCLUSION OF EDUCATIONAL GRANTS (1966=100)

	1966	1967	1968
<u>Before grant inclusion:</u>			
<u>Local levy per pupil</u>	100.00	114.95	111.68
Total personal income per pupil			
<u>Local levy per pupil</u>	100.00	126.08	142.89
Equalized assessment per pupil			
<u>After grant inclusion:</u>			
<u>Total educational expenditures per pupil</u>	100.00	109.08	116.07
Total personal income per pupil			
<u>Total educational expenditures per pupil</u>	100.00	122.35	150.65
Equalized assessment per pupil			

ment and revenues such as grants-in-aid. Educational expenditure was the other general area for which data was presented in order to form indices of effort.

The concept of income elasticity of demand for education was explained and applied, as well as the recommended steps in the formation of a composite index of educational effort. The final step was to create indices of effort based on the local levy, in order to bring about comparisons with the more general indices of effort such as those which included expenditures incorporating revenues derived from grants-in-aid.

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¹Item in the Winnipeg Free Press, February 4, 1970.

²John Neter and William Wasserman, Fundamental Statistics for Business and Economics (third edition; Boston: Allyn and Bacon, Inc., 1966), p. 66.

CHAPTER VI

SUMMARY, CONCLUSIONS AND IMPLICATIONS

An analysis of the educational effort of a single enterprise community, on the basis of its financial support for education, was the purpose of this study. This chapter contains a brief review including a statement of the problem, a description of the sample studied, and an explanation of the methodology employed in the research. A summary of major findings and conclusions is presented, and implications for further study are considered.

I. SUMMARY

The problem. The problem involved an attempt to measure the educational effort, for primary and secondary schools, of a single enterprise community. The research sought to evolve several measures of educational effort through consideration of relationships between burden, ability and actual expenditures in support of local schools. From these a final composite index of educational effort would be produced.

The sample. The single enterprise community selected for this investigation was the Township of Red Lake, Ontario. Situated at the centre of a mineral-rich mining region near the

Manitoba boundary, this community of 2,500 population has been established since the 1920's. Although Red Lake is located in an area which is somewhat remote in relation to larger urban centres, collection of data was complicated by the town's proximity to settlements which share many of its services. The analysis was restricted to educational effort at the primary and secondary levels and limited to the period 1966 to 1968.

Methodology. This study attempted to measure the educational effort of the chosen single enterprise community by the application of collected data to tables signifying burden, wealth, ability and expenditures. From these tables ratios were formed which were intended to represent indices of educational effort.

This effort was expressed as a ratio of total expenditures on education and: (a) total personal income, (b) equalized assessment and (c) disposable income. It was also expressed as a ratio of net operating expenditures for schools and: (a) total personal income, (b) equalized assessment and (c) disposable income. In each case the degree of change in effort from year to year was indicated with 1966 as the base year, as this was the first year for which sufficient information was made available.

Income elasticity of demand for education was also utilized as a measure of effort, and this was based on a comparison

of total educational expenditure per pupil with total personal income per pupil.

To form a composite index of effort which might readily be used for purposes of comparison with other places or other years in the same place, the ratio of net operating expenditures per pupil to total personal income per capita was implemented. This was applied to the sub-categories of: (a) instructional salaries, (b) instructional supplies, (c) administration and (d) operation and maintenance. A scale of relative weights for each of these sub-categories was devised and determined for the base year, 1966. The system was then applied to data for the years 1967 and 1968, and an index of change in effort was evolved.

II. FINDINGS

The findings, as indicated by the tables constructed from data collected and compiled in Chapter V, appear to be that the Red Lake level of effort steadily increased during the period under study. However, it is also apparent that this increase in level of effort was made, to some extent, with the aid of sources outside the community. The local citizens would have been much more hard pressed to maintain the increases in expenditures on education by relying solely upon

the resources available within the town boundaries.

The population experienced an approximate twenty-five per cent average annual turnover with the total remaining relatively unchanged from year to year during the period under study. School enrolment totals also appeared nearly static, but the labor force increased about two percent in its percentage of the total population from 43.95 per cent in 1966 to 45.97 per cent in 1968.

Total personal income per capita rose an estimated sixteen per cent per annum during the period while personal disposable income, after federal and provincial taxes, averaged slightly more than fourteen per cent yearly.

Municipal revenue from property assessment rose approximately ten per cent in three years but, due to increasing grants-in-aid, formed a decreasing percentage of overall revenue. In 1968, tax levy on real property formed 58.66 per cent of total municipal revenue, while grants accounted for another 35.19 per cent. In 1965 these figures had been 69.12 and 24.1 per cent respectively.

Municipal expenditures on education, as a percentage of total municipal expenditures, rose about one third but remained near sixty-four per cent of total school board revenues. Meanwhile the local levy increased approximately forty-six per cent

in dollars, and formed 34.87 per cent of total school board revenue by 1968. Total expenditures rose 54.06 per cent from 1966 to 1968 while net operating expenditures rose 43.71 per cent in the same period. The costliest item was instructional salaries which increased from 70.77 to 73.62 per cent of all net operating expenditures.

The measures of educational effort utilized all showed increases for the period 1966-1968. Income elasticity of demand for education was used as a measure of effort and this compared total educational income per pupil with total educational expenditures per pupil. This resulted in a reading of 1.65, indicating that considerable demands were made by education on rising income during the period studied.

When total educational expenditures were considered in direct ratio to total personal income, the effort index increased .0118. An increase of .0741 was indicated on the effort index when ratios were formed using total educational expenditures and equalized assessment. When calculated in terms of total educational expenditure and disposable personal income, the effort index rose .0161.

Again, considering the period 1966-1968, when net operating expenditures were compared to total personal income, equalized assessment and disposable personal income, the increases

on the index of effort were .0046, .0441 and .0071 respectively.

The composite index of educational effort was based on a system of weighting the individual sub-categories under net educational operating expenditures per pupil, and then comparing these to total personal income per capita. The effort index column, based on 1966 = 100, indicated an increase in effort of 7.85 per cent per annum as an average.

III. CONCLUSIONS

On the basis of the findings reported as a result of this study, it would appear that the following conclusions could be accepted as reasonably valid.

1. The many measures of effort utilized in this analysis of effort would seem to be sufficiently reliable. This is based on the consistency with which they produced comparable results when applied to the collected data.

2. There was a definite willingness on the part of the community to support all forms of local elementary and secondary education, with a special emphasis on the vocational area.

3. The level of support for education made possible through the efforts of the local residents was boosted through assistance from senior governments.

4. There was a steady increase in the level of effort

throughout the period under study.

5. The increase in the educational effort was not evenly distributed over the various areas of operational expenditures.

IV. IMPLICATIONS

The findings of this study suggest certain implications for elected officials, school administrators and others involved in the finance of education.

The fact that costs in education are rapidly rising is a universally accepted one and is only confirmed further by the evidence presented in this study. However, if some effective control is to be placed on these expenditures, or at least if appreciable value is to be received in return for investment made, itemized analysis can help pinpoint those areas most in need of closer attention.

For instance, new programs can be costly and their exact effect on the general level of required effort toward education might be more clearly envisaged. Guidelines for spending, in both amount and direction, can be formed from a better understanding of the financial structures in educational administration. The problem of quantity and quality in education is apparent, and a better understanding of the former might help in measuring the latter through careful comparisons.

Suggestions for further research growing out of this study might include a similar investigation covering a longer span of years, in order to determine whether the findings disclosed here are truly indicative of long-term trends. If the problem is re-investigated after the year 1971, there would be the advantage of the availability of information derived through another major census by the Dominion Bureau of Statistics.

The Red Lake Board of Education was formed in 1969 by the amalgamation of the various boards serving the area up to that time. A comparison of financial operations between the old system and the new, unitary one might also merit study.

Still another potential study would be a comparison of effort between Red Lake Township, a have-not area, and its neighbour the comparatively affluent Improvement District of Balmertown. Such a study need not limit itself to measures of effort for there are several other socioeconomic areas in which vast differences between the two appear to lie.

Finally, a comparison with other single enterprise communities in other regions might be useful for the purpose of establishing norms for frontier centres, or for the provinces in which they lie.

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APPENDIX A

MISCELLANEOUS DATA TABLES

TABLE XXIX

GENERAL POPULATION

RED LAKE, ONTARIO:

1966 CENSUS

AGE GROUPS	TOTAL	MALE	FEMALE
TOTAL	2,381	1,232	1,149
0-4	303	148	155
5-9	330	155	175
10-14	244	121	123
15-19	203	108	95
20-24	167	77	90
25-34	336	176	170
35-44	322	168	154
45-54	266	149	117
55-64	147	88	59
65-69	34	22	12
70 +	29	20	9

* Source: Dominion Bureau of Statistics.

TABLE XXX

AGE BREAKDOWN AND TOTAL POPULATION FOR THE
CORPORATION OF THE TOWNSHIP OF RED LAKE: 1961-1967

AGES	1961	1962	1963	1964	1965	1966	1967
0-19	1,169	1,186	1,217	1,269	1,159	1,146	1,149
20-59	1,322	1,374	1,365	1,397	1,262	1,258	1,232
60 +	77	83	84	89	89	119	129
TOTAL	2,568	2,643	2,666	2,755	2,510	2,523	2,510

* Source: Area Assessment Office

TABLE XXXI

TOTAL SCHOOL ENROLMENTS FOR
RED LAKE MINING DISTRICT

YEAR	ROMAN CATHOLIC SEPARATE SCHOOL	PUBLIC SCHOOLS (ELEMENTARY)	COMPOSITE HIGH SCHOOL
1965	144	1,129	390
1966	125	1,253	393
1967	139	1,210	396
1968	135	1,277	392

* Source: Red Lake Board of Education

TABLE XXXII

ELEMENTARY SCHOOL ENROLMENT: SEPTEMBER, 1967,

RED LAKE MINING DISTRICT

SCHOOL	K	1	2	3	4	5	6	7	8	TOTAL
Red Lake P.S.	52	59	39	48	46	38	40	35	48	405
Red Lake S.S.		20	24	12	19	17	17	21	9	139
Madsen		27	22	22	15	21	10	17	12	146
Balmertown		24	46	28	26	22	26	19	20	211
Cochenour	43	35	23	19	20	18	9	14	12	193
Mackenzie Is.		5	6	6	12	10	8	7	3	57
Ear Falls		25	29	22	32	27	24	23	16	198
TOTAL	95	195	189	157	170	153	134	136	120	1,349

* Source: School Board Office

TABLE XXXIII

HIGHEST GRADE ATTENDED FOR THE POPULATION 5 YEARS AND OVER
PRESENTLY NOT ATTENDING SCHOOL -- 1961 CENSUS

	number	per cent of total
No schooling	106	8.50%
Pre Grade 1		
Elementary 1-4	113	9.07
Elementary 5+	492	39.49
High School 1 & 2	251	20.14
High School 3 & 4	200	16.05
High School 5	40	3.21
University 1 & 2	20	1.60
University 3 & 4	3	.25
University Degree	21	1.69
Totals	1,246	100.00%

TABLE XXXIV

COMPARISON OF RATE OF GROWTH
OF EXPENDITURES ON SCHOOLS AND
EXPENDITURES ON LIQUOR (1966=100)

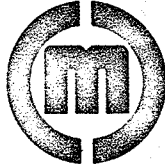
YEAR	SCHOOL EXPENDITURES	LIQUOR SALES
1961		70.16
1962		72.68
1963		78.37
1964		79.57
1965	77.10	95.08
1966	100.00	100.00
1967	127.40	106.28
1968	141.02	112.99

APPENDIX B

SELECTED CORRESPONDENCE

1942-1943

CANADA MANPOWER CENTRE



CENTRE DE MAIN-D'OEUVRE DU CANADA

DEPARTMENT OF MANPOWER AND IMMIGRATION

MINISTÈRE DE LA MAIN-D'OEUVRE ET DE L'IMMIGRATION

Mr. R.G. Vinet,
Street,
WINNIPEG 15, Manitoba

67 Elm Street East,
Sudbury, Ontario.
28 May 1969

Dear Sir:

Re: The Town of Red Lake, Ontario

Your request to the Department of Manpower & Immigration in Toronto has been forwarded to me for reply.

You will notice from the information enclosed that current and detailed data on Red Lake is not easy to come by. The reason is, that such data simply does not exist. What data is available is not always correct as can be discerned from the widely divergent opinions with regards to the towns population as expressed in the different charts enclosed. As near as I can estimate, the present population of the town proper is approximately 2,650, while the population of the area including Red Lake, Balmertown, Madsen and Cochenour is in the neighbourhood of 7,000 - 8,000. More exact figures are difficult to state because much of the area is officially classified as unorganized.

The primary industry in the area is gold mining and it would appear that the area's hay-day passed many years ago. The currently operating mines have limited known reserves which are being expanded at a rate insufficient to outstrip current production rates beyond the very near-term future.

Accurate labour force and occupational composition data are not only not available but would perhaps be impossible to gather due to the high turnover rate being experienced in the area's mines. Average wages in the area's mines for 1969 are \$2.03 - \$2.15 for non-union firms to \$2.11 - \$2.22 for union firms. Crews on bonus rates would make considerably more than these base labour rates. Unfortunately, because the list of bonus rates that I have, apply to one particular firm, I am not at liberty to make these public.

....2

In conclusion, I would note that the town of Red Lake and much of the surrounding area is experiencing a stagnating economy. The area's growth potential does not appear particularly attractive at this time. Of course, a major mineral discovery could alter the picture drastically, overnight.

I am sorry we could not provide you with further information at this time. Please feel free to contact us with regards to the enclosed or any other information you should require. We will be happy to provide you with what is available, meager though it may be at times.

Yours sincerely,

M. Soucie
District Economist
Department of Manpower & Immigration

Encl.

cc: Mr. R. Gordon
Reg. Economist