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BULLETIN No. 1.

Expenditure for Schools as a Factor in
the Cost of Raising the Canadian Child.

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PREFACE

In recent years expenditures of all kinds, public and private, have come in for close scrutiny, and expenditures for education have been no exception. Intelligent consideration of educational expenditures, however, is frequently hampered by a lack of comprehensive facts to use as standards in measuring the propriety or adequacy of school support. The series of bulletins, of which this is the first, is designed to help in meeting this difficulty, by giving a comprehensive grasp of some of these fundamentals,--by showing in context, so to speak, the provision of schools and colleges as an economic activity.

The present bulletin, for instance, after examining all available evidence that is relevant, concludes that in recent years the cost of the average Canadian child's schooling has been about $750, and the other costs involved in raising him or her to the age of self-support have been about $5,000. In other words, it costs no more to raise six children and give them an average schooling than to raise seven completely illiterate. More is spent on clothing a child than on providing its formal education, twice as much is spent on nourishing it, and nearly three times as much on housing it.

The bulletins are being prepared by J. E. Robbins, M.A., in the Education Branch of the Bureau, of which M. C. MacLean, M.A., F.S.S. is the Chief.

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EXPENDITURE FOR SCHOOLS AS A FACTOR IN THE COST OF RAISING THE CANADIAN CHILD.

In the seven[1] Canadian provinces for which a record of the ages and school grades of children is available, it can be shown[2] that the average child completes more than eight years, or grades, of school work. Two-thirds of all children go as far as the final year of the elementary school, about half do some high school work, one-fifth or more reach the final or matriculation year, more than one-tenth continue to a professional school or university, and about three per hundred get as far as a university degree. Although the number of girls and boys at the outset is about equal, girls in school are considerably more numerous than boys from the fifth or six grade right up to normal school or university entrance, when the proportions are reversed. Consequently, the average girl when leaving school is about half a year's work in advance of the average boy.

The Cost of a Child's Schooling

Knowing thus the extent of the average child's schooling, it is comparatively easy to show the cost. The cost of providing a year's school training varies according to the degree of advancement of the child, but sufficient statistical data exist to make an approximate calculation of the cost of a year in elementary grades, secondary grades, and university years respectively. The current cost of operating the Ontario elementary schools (average over the last five years, on the basis of average daily attendance) has been $66 per pupil per annum, as compared with $137 in the secondary schools. In making a similar calculation for Manitoba, Mr. Andrew Moore's figures[3] show a five-year average cost of $59 for elementary pupils, and $108 for secondary, on the basis of the total year's enrolment. Saskatchewan secondary schools in the last five years show an expenditure of $119 per pupil of the yearly enrolment, while the corresponding elementary schools show $59. The correspondence between the Saskatchewan and Manitoba costs is thus very close, and if they were based on average daily attendance as the Ontario figures are, or vice versa, the three would differ very little. Apart from these three provinces there are no complete records published except for a few cities. But because of the similarity in the provinces examined, and the observable tendency for school costs to be much the same in Alberta and British Columbia, but to be somewhat lower in the provinces east of Ontario, it must be very near the facts to say that the cost per pupil of the average day's attendance in the elementary grades is $60-$70, in the secondary grades $120-$140.

Attention is drawn to the cost per pupil of the average day's attendance rather than per pupil who attended school at any time during the year, for it is the former number rather than the latter who complete a full grade or year of work in a school year. And it is the cost of completing a year's work that we need to decide, for we know, from the opening paragraph above, the number of years' work that a child completes.

1/ Quebec and British Columbia do not keep records on which such a calculation can be based.

2/ See the Annual Survey of Education in Canada, 1930; pp. XIII, XXVI. Published in 1932 by the Dominion Bureau of Statistics, Ottawa. The present summary is from the table shown there at length, and based on school records of the preceding half dozen years.

3/ In the Manitoba Teacher, Dec. 1932. An address delivered over the radio, entitled High School Costs - Some Comparisons, by Andrew Moore, Inspector of Secondary Schools for Manitoba.

Without taking account of board, lodging and other personal expensed, the annual cost of a student to a Canadian university is shown, in the Annual Survey of Education in Canada, 1930, to be between $500 and $600. In view of the many activities of universities in addition to the instruction of regular students it is probably not necessary to add anything to this sum to obtain a fair figure per student completing a year's work in an academic year. If we use the figure $550, the cost of a university year is about four times the cost of a secondary year, which in turn is roughly double the cost of an elementary year.

On this basis the cost of a formal education that lasts until university graduation is about $3,200,--i.e. the cost to the school and university only, and not including the students ordinary cost of living at any time. On the same basis, the cost to the community of a schooling that ends with a complete high school training is about $1,050, and the cost of a full elementary schooling is roughly $500.

Using the table of school survival in the Annual Survey of Education to which reference was made above, the **entire** expenditure on schools and universities is found to be $690 per child. To obtain the complete cost, something should be added to this to include the education costs met directly by the parents, such as books and other school equipment, and any private tuition that the child receives. Such a figure has to be chosen more or less arbitrarily, but $50 or $60 would probably be a sufficient allowance,[4] and it could accordingly be said that the cost of the Canadian child's schooling, in round numbers, is $750.

The Cost of Raising a Child without Schooling.

Having found the amount spent on providing schools, it will be of interest to calculate, and place alongside of this amount, the other expenditures involved in raising a child. All of these other major items are met directly out of the family purse, and not via the road of taxes and the public treasury as is the cost of education, and the approach to them is most readily made by a study of family budgets and related data.

But the first question to be settled is: How long a period of dependence is involved in raising a child? Or, at what age does the average child become self supporting? The census[5] of 1931 suggests the answer. It shows that there were 294,457 young people under the age of 20 working for wages, and their aggregate earnings of the year were $100,457,300. A further 164,877 were working, but not for a settled wage, as is commonly the case with farmers' sons. If it be allowed that their earnings were equivalent to the earnings of those who were working for a definite wage, the total earnings of the year for everyone under the age of 20 who was gainfully employed were $156,706,900. This sum may also be considered to approximate the accumulated earnings of the group who became 19 years of age two or three years later, on the condition that the rate of earnings remained the same as in 1930-31, since the number at each single year of age does not differ greatly. Thus $156,706,900 represents the accumulated earnings of about 206,000 young people of age 19; the average boy or girl at age 19 has earned $760.

When speaking of age 19 we mean all those who are in their twentieth year, their average age being 19 years and 6 months. In order to know the total earnings when the age of 20 is reached, it is necessary to add something for the last six months. As the average annual earnings per person at ages 18 and 19 was $237, and at ages 20-24 was $396, the earnings of the 6 months in question would be about $145, and the average total at the end of the teens would accordingly be $905.

How many years of self support has the $905 provided? It would allow $38 per month for two years. If we allow that they are independent on $38 per month, then their dependency ends with their eighteenth year. To place the period of dependence at 18 years is obviously being conservative.

4/ In Prices and Price Indexes, 1913-1931, published by the Dominion Bureau of Statistics, it is shown on page 222, that the average annual expenditure of a group of civil servants' families on books and the education of their children is about $7 per child.

5/ Bulletin No. XXXIII, Earnings Among Wage-Earners for Canada and the Provinces; Bulletin No. XXXIV, Ages of the Gainfully Employed Ten Years of Age and Over for Canada and the Provinces.

The next question to be answered is: What does it cost the parents to raise a child to the age of 18?

Cost of Food.- Probably the most convenient way of calculating the cost of food that a child consumes in 18 years, will be by using the family budget compiled by the Department of Labour and Dominion Bureau of Statistics.[6] Here it will be found that a family budget of staple foods, in the year preceding the date of the 1931 census, cost about $505. Allowing five members to this family, two adults and three children, we can find what the annual consumption of a child is worth, providing we know what proportion the value of a child's diet bears to that of an adult's. There have been some careful calculations of these ratios made for the United States, and there is no apparent reason why they should not be applicable to Canada.

A bulletin of the United States Bureau of Labor Statistics,[7] based on an investigation of over 12,000 families, shows the values of food consumption for different ages to compare as follows:

Adult male	$ 1.00
Adult female	.90
Child, 11-14 years	.90
Child, 7-10 years	.75
Child, 4-6 years	.40
Child, 3 years or under	.15

Using these ratios, and the ages of children under 18 as shown by the census of 1931, it can be found that the family of five, when eating $506-worth of food is consuming the equivalent of 3.8 adult male units. Thus one adult male unit is worth $134, and since 11.25 units are required to feed the child to the age of 18, the cost of his food for 18 years, on the basis of 1930-31 prices, is $1,508.

Dr. Graham Lusk, in his book, The Fundamental Basis of Nutrition,[8] gives a somewhat different table of ratios for consumption of children at varying ages, on the basis of which the Canadian child in 18 years would consume 12.68 adult male units, worth $126 each, or a total of $1,598. For our purposes it can not be far from the truth to take a figure half way between these two, say $1,550.

Cost of Clothing.- The budget in Prices and Price Indexes, used for the calculation of food costs, does not contain a record of clothing costs. The study of budgets of civil servants' families in the same report, however, shows for the year an average expenditure on clothing amounting to $52.24 for the first child and $35.33 for the second child, in four-person families. If the $52.24 could be taken as an average for the older children, and the $35.33 for the younger children, the expenditure in 18 years would be $788.

For the purpose of measuring the change in the cost of living in working men's families in Canada, the Department of Labour prepares an index,[9] in which clothing is given a weight of 18.5 p.c. as compared with a weight of 35 p.c. for food. If this ratio were used in the case of children alone, in conjunction with the figure of $1,550 for food, the cost of clothing in 18 years would be $820.

On the basis of this, and other evidence that might be set down, it seems safe to say that, on the basis of 1930-31 prices, the cost of clothing for the 18 years of dependence would be in the neighbourhood of $800.

Cost of Shelter.- The expenditure on rent, fuel, and light shown in the family budget in Prices and Price Indexes, for the year preceding the date of the census, is almost identical with the amount allowed for food,--$503 as compared with $505. On this basis, the cost of these items to the family would be $9,054 in 18 years.

6/ Prices and Price Indexes 1913-31, p. 132.

7/ Cost of Living in the United States, p. 70. Government Printing Office, Washington, 1924.

8/ Yale University Press, Second Edition, 1923, p. 48.

9/ In the Monthly Labour Gazette.

What proportion of this cost should be charged to each child, it is difficult to decide. When one looks for guidance to a table which shows the amount of rent paid by families of different sizes, he sees that families without children pay the highest rents, and that the more children there are in a family the lower is the rent. But it does not follow that children are an asset offsetting the cost of rent, or that no rent is chargeable to them! Perhaps a reasonable, if arbitrary, way of calculating the rent, light, and heat costs chargeable to a child is to allocate to it one-sixth[10/] of the amount paid in 18 years by the family of five. This would amount to $1,509.

Under the heading of shelter an entry should also be made for the cost of furniture and household equipment used by the child. The study of civil servants' budgets, to which reference has already been made, shows the year's expenditure under this heading for a four-person family to be $78. In 18 years this would total up to $1,404, and be mainly replacement costs. One-sixth of this charged to each child, which is probably a very conservative proportion, would be $234. It might also be permissable to charge the child with a part of the cost of equipping the home when the parents first started to keep house, but against this there is the consideration that, if the child is charged with his share of replacement costs, the home is left equipped when he reaches the age of independence.

In addition to the cost of rent, fuel, light and furniture there are such items as laundry and cleaning supplies, domestic service, telephone, toiletries, etc., to be considered in connection with the housing of a child. Calculated in the same way as furniture costs, these amount to $300 at least, per child, in 18 years.

Putting all of these items together, we have a total of $2,043 in connection with housing or shelter during the period of the child's dependence.

Health, Recreational, & Social Costs.- Using the expenditures of civil servants as the only available guide, the four-person family spends $60 per year on medicine, hospital bills, doctors' and dentists' fees. A full fourth of this, it seems, should be charged to each child, as health expenditures for juveniles average quite as high as for the parents. [11/] In 18 years this would mean $270. It is not unlikely that a further sum could fairly be added to this to cover medical and related charges at the time of the child's birth. In the families averaging $60 per year, it is not stated what proportion of confinement cases are included.

Recreation charges include toys, sporting goods, vacations, frequently automobile buying and operating costs, theatres and other amusements. One-sixth of this charged to the child makes an accumulation of $255 in 18 years. Dues for insurance, junior organizations, church, etc. would easily raise this to $300, judging by the evidence available, making a total under this general heading of health, recreational, and social expenditures, of something like $600.

The Cost of Schools vs Other Expenditure on a Child.

The only major item in connection with rearing a child that has not now been considered, is the value of the parents' services and sacrifices, especially the mother's. While it is not in any sense intended to overlook these, they must be passed over with the barest mention as they do not permit of measurement in dollars, for comparison with the other costs. Bringing together the costs under the several headings now, we have the following summary for the average Canadian child during its 18 years of dependence, on the basis of economic conditions in 1930-31.

Food	$ 1,550
Clothing	800
Housing, and related costs	2,050
Health, recreational and social costs	600
Total without schooling	5,000
Schooling	750
Total including schooling	5,750

10/ This is the proportion adopted in the book, The Money Value of a Man, by Louis I. Dublin, Ph.D., and Alfred J. Lotka, D.Sc. The Ronald Press Company, New York, 1930. See p. 32.

11/ See Cornell University Agricultural Experiment Station Bulletin No. 423, by E. L. Kirkpatrick.

Since a very considerable proportion of the cost of schools is met out of property taxes, which in turn are in part covered by the rent charged against the child, it might be contended that there is some duplication between the costs shown for education and for shelter, but all of the estimates have probably been made on a basis conservative enough to make allowance for any duplication of this nature.[12/]

It is well worth while to reflect now on the proportions that exist between the cost of schooling and the other outlays involved in raising a child to maturity. Figures for the United States as well as for Canada go to show that barely 13 p.c. of the total is spent on formal school training. In other words, it costs no more to raise six children and give them an average schooling than to raise seven completely illiterate. More is spent on clothing a child than on sending it to school, twice as much is spent on nourishing it, and nearly three times as much on housing it. The money devoted to its formal education can scarcely be considered a very formidable fraction of the total sum involved in bringing a child to the age of self support. It would, no doubt, seem smaller still if seen in comparison with the amount that it adds to the earning power of the child, and perhaps insignificant when considering the wider mental life that an education opens up to the individual. It is quite probable that the $750 could be made to yield better returns in both of those respects than it does at present, and will be made to do so as educators further adjust present-day schools to these ends, but in the meantime it is difficult to regard the proportion of a child's cost going to its education as excessive.

12/ Dr. Dublin and Dr. Lotka, in the book mentioned in a previous footnote, give the following comparable figures for the United States a few years earlier. Prices at that time were higher of course, than in the years to which the Canadian figures apply.

Cost of being born	$ 250
Food	2,755
Clothing and shelter	3,333
Education, paid directly by family	50
Health	283
Recreation	130
Insurance	54
Sundries	570
Total paid by family	7,425
Education costs paid by community	1,100