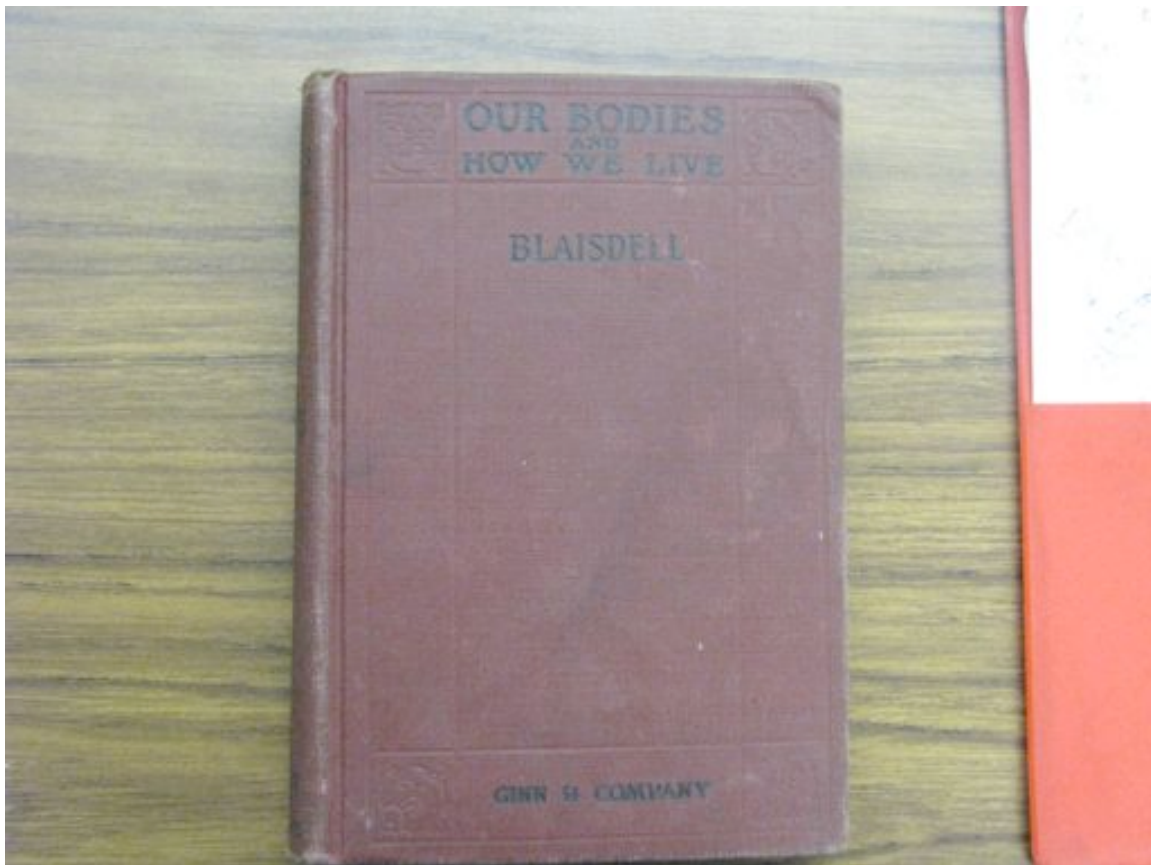


Science Curriculum, Education, and Context during the 1920s

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Hypothesis

To start our investigation concerning the Science Curriculum in the 1920s, we looked to see if there even was a curriculum for science in that particular era. While we could not find anything pertaining specifically to the topic of science, we did find two subjects (Nature and Agriculture) that accurately summed up most of what the science curriculum pertains to today. Our research delves into what these two subjects consisted of, how they were taught, and the context surrounding their teaching. We explored the idea of if there was a curriculum for science in the 1920s, and did not come out empty handed.



Discussion of Sources

In this section you will find a discussion of the sources we used to conduct our research and to test our hypothesis. These sources are my no means an exhausted list of sources, but are simply the ones that we found most pertinent to our topic.

Primary Sources

Blasdel, Albert F. *Our Bodies and How we Live*. Ginn & Company
Boston Mass. USA 1921

This book was used to gather information on the lessons and ideas used in 1920s classrooms in relation to science education. This book also contains information on health classes.

Brittan, John. *Elementary Agriculture and Nature Study: New Brunswick Edition*.
The Educational Book Company Ltd. Toronto Ont. Canada no Publishing
date.

This book was used to gather information on the lessons and ideas used in 1920s classrooms in relation to science education.

Gorham, A, C. *Nature Study and Agriculture Course*. Fredericton NB Canada 1928

This course guide provide us with a lot of information on the science education.

New Brunswick Department of Education, *Annual Report of New Brunswick Schools 1920-21*.

Fredericton, NB Canada, 1922

-----, *Annual Report of New Brunswick Schools 1922-23*.

Fredericton, NB Canada, 1924

-----, *Annual Report of New Brunswick Schools 1927-28*.

Fredericton, NB Canada, 1929

-----, *Annual Report of New Brunswick Schools 1928-29*.

Fredericton, NB Canada, 1930

These reports were used to gather information on the school system of the 1920s in New Brunswick. Statistics for size of student body, Teachers' salaries and other items were used in this assignment.

New Brunswick Department of Education, *Outline of courses of study for Public schools*

1921-22. Fredericton, NB Canada

-----, *Outline of courses of study for Public schools 1922-23.*
Fredericton, NB Canada

-----, *Outline of courses of study for Public schools 1925-26.*
Fredericton, NB Canada

These outlines were used to gather information on the curriculum of 1920s. Particular care was taken in looking at the texts used in science education.

Rothsay School Papers, Provincial Archives of New Brunswick
Microfiche F19615 Fredericton NB, Canada

These papers provided us with valuable insights into the administration of a school in the 1920s.

Secondary Sources

Wikipedia , “King-Byng Affair.” last modified on 8 November 2010 .
http://en.wikipedia.org/wiki/King-Byng_Affair

This website’s information was used in the context section of this assignment.

Teaching and Learning Resources in Science Education

There are some examples of textbooks that we looked at from our decade – it, again, is by no means an exhaustive list. These were just the ones that were available to us through the UNB Library and Provincial Archives, as well as the New Brunswick School Days Museum.

Blasdel, Albert F. *Our Bodies and How we Live*. Ginn & Company
Boston Mass. USA 1921

Brittan, John. *Elementary Agriculture and Nature Study: New Brunswick Edition*.

Gorham, A, C. *Nature Study and Agriculture Course*. Fredericton NB Canada 1928

Context of Education in New Brunswick from 1920 - 1930

During the 1920s, or the “Roaring Twenties” as they were called, education was slowly growing in New Brunswick. As you can see by the table included in this section, every year the number of schools was growing. Education was becoming more important not only just in New Brunswick, but all across Canada schools were cropping up. During

this decade it is also interesting to note that salaries increased, indicating that teachers were becoming more important as well, and that their profession was becoming more recognized. Even though women were still paid visibly less than men, it should be noted that the salaries of the third class women were raised to almost equal to that of the third class men by the middle of the 1920s.

AVERAGE SALARIES OF TEACHERS¹

Class of teacher	1913	1923
Grammar Schools	1,104.20	2,103.62
Superior School	723.70	1,333.33
First Class, Male	845.48	1,449.54
Second Class, Male	374.94	808.80
Third Class, Male	284.92	531.80
First Class, Female	418.92	996.17
Second Class, Female	308.02	735.44
Third Class, Female	239.17	561.86

Year	No. of Schools	Teachers of Each Class						Provincial Grants
		Grammar Schools	Sup. And Class I	Class II	Class III	C.R.A	Totals	
1920	1898	27	593	945	410	79	2054	193,671.64
1921	1973	26	608	1016	412	80	2142	244,555.92
1922	2063	26	662	1056	410	92	2246	259,702.78
1923	2108	31	734	1088	347	98	2298	265,275.22
1924	2195	29	794	1133	346	93	2395	283,897.36
1925	2277	32	866	1157	335	94	2484	296,585.20
1926	2300	31	926	1162	307	99	2525	302,549.18
1927	2314	34	962	1152	275	100	2533	309,080.25
1928	2358	31	991	1189	265	105	2581	316,325.30
1929	2388	31	1037	1174	286	110	2638	322,426.52
1930	2434	33	1075	1174	274	105	2661	329,406.66

It is very interesting to note that schools in the 1920s had similar unresolved issues to what is seen today in the education system. One of the annual reports from 1929-30 discusses the issues raised at a conference for the Canadian Education Association, which was held every second year. For instance, one of the issues that were discussed was Home Study (and the discussion of the abolition of homework). This

¹ New Brunswick Department of Education. *Annual Report of the Schools of New Brunswick 1927-1928*, Fredericton NB Canada. p. (xxi)

continues to be a topic of debate today: should homework be assigned, or should class work be completed during the run of a day?²

The Annual Reports from 1929-1930 also discussed the Canadian Education Association Conference. This conference is held every two years, and the chief superintendent of this Annual Report was in attendance to this one, which was held in Montreal, Quebec in November of that year. One of the topics of discussion at the conference was the removal of the General Science textbook from classrooms grades VIII to high school. Also it reads,

*“A few teachers have objected to the text on Physiology on the ground that the scientific names are too difficult for lower grades. No text in this subject can avoid scientific terms, but a good teacher will be able to simplify them. The text is not used by pupils in the lowest grades. For Grade V and VI, simplification may be needed. For VII and VIII no objection has been made. No other or better text has been suggested. There is no prescribed English dictionary for the use of schools.”*³

Some interesting contextual things can be found on microfiche from the Provincial Archives. For instance, the following financial statement minutes from a meeting in 1920 shows that 100\$ was given to a certain student in order to further his education at Kings College.⁴

² Ibid p.(xx)

³ New Brunswick Department of Education. *Annual Report of the Schools of New Brunswick 1927-1928*, p.(xi-xii)

⁴ *Rothesay School Papers* Microfiche.

Minutes of meeting of the Board of Education held at St. John
on Wednesday October 6th 1920.

PRESENT The Lord Bishop in the Chair, Rev. Canon Daniel
Rev. Canon Armstrong, Rev. J. H. A. Holmes Rev.
H. A. Cody, Dean Neales, Archdeacon Crowfoot
H. B. Schofield, P. R. L. Fairweather, J. H. A. L. Fair-
weather, A. C. Skelton and H. P. Puddington.

Minutes of meeting of April 27th last read and confirmed.

Report Rothessay Executive read and on Motion taken up
section by section after Dr. Hibbard had read report on need
of increased accommodation for the School.

On motion duly seconded the Report of the Rothessay Executive
was adopted and ~~an~~ approval given to an advance of \$25,000.
as a loan from the Board of Education fund to the Rothessay
School provided plans must first be submitted to the Board
before tenders are asked for the construction of the building.

On motion duly seconded It Was Resolved that the taxes
and insurance on the Rothessay School property should
after January first next be a charge on the School funds.

On motion duly seconded It Was Resolved that One Hundred
Dollars be granted on the application of the Rev. W J Bate
for assistance towards his son's education at Kings College.

On Motion meeting adjourned.

H. P. Puddington
Secy.

This next microfiche is about salaries in the 1920s:⁵

⁵Rothessay School Papers Microfiche

The Rothesay Executive of the Board of Education
beg to report as follows:-

1. Dr. Hibbard reported that Mr. Ryder who had undertaken the clerical work of the School during vacation had refused to accept any remuneration for same.

2. That Mr. Baker had been added to the staff as a Master during the mornings only at a salary of \$500. a year and that the Rev. Mr. LeRoy had been engaged to teach French once a week at the rate of \$5.00 per week.

3. Dr. Hibbard has traded his old Ford school car for a new one, receiving \$275.00 allowance for the old car on a total purchase price of \$580- and had contributed \$440- himself towards such purchase price in consideration of the use which he makes of the car.

4. The repairs committee have reported that the large barn has been torn down and the repairs to the two smaller barns completed at an expense of about \$1186.00

5. That a concrete floor has been put in the cellar of Mr. Scott's house at an expense of about \$75.00.

6. That extensive painting was done and minor repairs made in the North and South houses during the Summer vacation and the expense of this paid for out of the School funds.

All of which is respectfully Submitted.

This next microfiche shows another contextual (and humorous) discourse concerning broken limbs and their costs.⁶

Dr. Hibbard reported that Dr. Peters had sent a bill to the School for \$25.00 each for two boys that had been treated for broken ankles which service he did not consider came in under the regular fee of \$7.00 charged for each boy. Dr. Hibbard said the arrangement covered broken limbs and he did not think that the School could bill the parents for these charges. It was moved and seconded that Dr. Hibbard take the matter up with Dr. Peters pointing out that although the Board recognized their

Teachers were harsher and to the point in the twenties, but their values remain the same. Generally they were expected to be involved, engaging, and on task, and to represent themselves in a role model fashion. For instance, a excerpt from the Annual Reports says:

⁶ *Rothesay School Papers* Microfiche

“It shall be the duty of each and every teacher: (1) To maintain a deportment becoming his position as an educator of the young; and to strive diligently to have exemplified in the intercourse and conduct of the pupils throughout the school, the principles of Christian morality. To this end it shall be his duty to give instruction to the school, as occasion may require, concerning such moral actions and habits as the following:[...]”⁷

Broader Social and Scientific Context

For context as to what was happening in the world during the “Roaring Twenties”, two of the main things would be the King-Byng affair, and prohibition. Prohibition refers to the practice of prohibiting the manufacture, transportation, import, export, and sale of alcohol and alcoholic beverages. In the middle of the 1920s the Canadian government became embroiled in a constitutional crisis, in 1926 the Liberal government, led by William Lyon Mackenzie King, lost the confidence of the House of Commons. Prime Minister King went to the Governor General, Lord Byng of Vimy, and asked for the dissolution of parliament and to call an election. Byng refused and asked the Conservative leader, Arthur Meighen, to form the next government.⁸ It is also important to note that at the end of the twenties was the stock market crash, which will directly affect the school system in the thirties. Black Tuesday, which took place on October 29th 1929, would directly affect the education system in the beginning of the next decade, not immediately but it would certainly have a lasting effect.

Relations and Scientific Significance of the Data Collected, as well as Discussion

The curriculum itself is also very interesting. There is not direct reference to ‘Science’ anywhere, but Nature Lessons and Agriculture seem to be the equivalent. It is relatively similar in all aspects, and whatever isn’t covered in Nature Lessons or Agriculture that is normally covered in Science (such as Physics) seems to be made up for in other places.

A course outline concerning **Nature Study and Agriculture Course for the use in the Public Schools of New Brunswick** says, “This outline omits much that had been included in the former course under the sub-headings “Environment” and “Physical Nature”. The amount of subject matter has been significantly reduced.”⁹ This instructional booklet also mentions that every classroom should keep a ‘bird calendar’ in

⁷ New Brunswick Department of Education. *Annual Report of the Schools of New Brunswick 1927-1928*.

⁸ King-Byng Affair, Wikipedia, Nov 10, 2010 http://en.wikipedia.org/wiki/King_Byng_Affair

⁹ Gorham, A, C. *Nature Study and Agriculture Course*. p.(i)

which they are supposed to record their observations of birds, and a ‘flower calendar’, which will keep track of the beginnings of spring, by recording the appearance of specific wild plants.¹⁰ The text also describes Nature Study as “the study of natural things by most direct observational methods. This means that both the material studied and the method of study are within the field of the child’s natural life.”¹¹ The outcomes for this course include being “alert to perceive variations in, and to catch new ideas from, all similar objects of nature [birds, flowers and streams].”¹² It also says that “one of the most important educative values that can be claimed for nature study is its influence in training the pupil to appreciate natural objects and phenomena, so that he comes to see them with the eye of the poet or artist or nature lover.”¹³ Included in this text is the example of Wordsworth and of Ruskin as natural poets.

Featured below is a table containing all subjects studied under the title of “Nature Study and Agriculture Course” in 1928.¹⁴

	Autumn	Winter	Spring
Grade I	Seasonal Activities, Bird Study, Other Forest Trees, Cultivated Flowers, Field Plants, Weeds, The Home, Clothing, Wild Animals, Common Domestic Animals, Institutional Life, Insect Life.		
Grade II	Weeds, Grains, Birds, Flowers, Trees, Frost, Domestic and Pet Bird.	Food Storage for Winter, Care of Farm Implements, Evergreen Trees, Birds, Domestic and Pet Animals, Sheep, Rabbit, and Correlations.	Birds, Spring Awakening, Spring Flowers, Spring Study of Hen, Sowing Seeds, Arbor Day, Weeds, Strawberries
Grade III	Identification of Common Trees of Locality, Crops, Identification of Garden Flowers, Threshing of Grain.	Evergreen Trees, Insects, Sheep, Breeds, Furbearing Animals, Snowflakes, House Plants.	Bird Chart of Calendar, Butterfly Study.
Grade IV	Weeds, Garden Flowers, Wild Flowers, Trees, Insects, Birds.	Evergreen Trees, Winter Birds, Comparison of Horse and Cow, Domestic Animals.	Birds, Frogs, Toads, and Tadpoles, Drainage, Wild Shrubs, Roots of Plants, Transplanting a

¹⁰ Ibid p.(ii)

¹¹ Ibid p.(ii)

¹² Ibid p.(ii)

¹³ Ibid p. (iii)

¹⁴ Ibid

			Tree or Shrub, Observe Arbor Day Activities, Dandelions, Materials, Insects, and Aphids or Plant Lice.
Grade V	The Pea Plant, Observation, Legumes, Insects, Weeds, Aim (teaching pupils about different types of weeds), Bulbs and Bulb Planting, Soil, Potato Plant, Birds, Apples, and Parts of Plants used for Food.	Evergreens, How Animals Prepare for Winter, Game Animals, Birds, Stars, Squirrels, Milk (it's composition), and Lumbering Operations.	Birds, Maple Sugar Making, Changes in Seed During Germination, Fish, Arbor Day, Garden Flowers, and Insects.
Grade VI	Weeds, Insects, Plant Cuttings, Potting of Rooted Cuttings, Soil, Birds, Fruit Trees, Cone Bearing Trees and Evergreens.	Cuts of Beefs, Water Birds, Stars, Parts of a Horse, Parts of a Cow, Types and Breeds of Dairy Cattle, Sheep and Parts of Sheep, Structure of the Hen and Breeds of Hens, Moisture in the Air, Solutions, Nature of Solids, Liquids, and Gases.	Surface Changes, Germination of Seeds, Do Germinating Seeds Need Weeds, Do Growing Plants Need Water, Do Germinating Seeds and Growing Plants Require Warmth, Evaporation of Moisture from the Soil< Birds, Bird Protection, Common Flowers, Arbor Day, River and Shore Fish, Strawberry Plant and Blossoms and the House Fly.
Grade VII	Weeds, Typical Flowers and their Plants, Leaf Forms, Coloring and Falling of Leaves, Seed Dispersal, the Grasshopper,	Winter Birds, The Ruffed Grouse or Other Winter Birds, Household Pets, Expansion and Contraction (Liquid, Solid, Gas), Fur	Soil, Biting Insects, Remedy for Biting Insects, Common Wild Flowers, Birds, Nature Calendar, The Apple Blossom and

	Adaptive Features of the Grasshopper, Life History of the Grasshopper, General Structure of Stems of Plants, Kinds of Stems and Functions of Stems, Kinds and Forms of Roots and their Functions, Length of Life in Plants, and Seed Vessels.	Bearing Animals of New Brunswick, Force of Gravity, Stars, Minerals, Limestone and its varieties, Some Common Rocks and the Uses of Rocks and Minerals, and the Properties of Mica, Feldspar and Quartz.	Strawberry Blossoms, the Rose Family, and Insects.
Grade VIII	The Sweet Pea Plant, the Red Clover Plant, the Pulse Family, Nodules, Nasturtium, Weeds, Eradication of Weeds, Rotation of Crops, Seed Dispersal, Insects, Soils, Water Holding Capacity of Soil, Litmus Test for Acid, Acid and Alkaline Soils, Lime as a Corrective of Acid Soil, Fertilizers, Essential Elements for Plants, Study of Different Varieties of Apples and Apple Scabs, Apple Growing Industry, and Classification of Fruit.	Stars and Planets, the Composition of Milk and the Care of Milk, Poultry Keeping, Points of a Fowl, Testing Eggs, Horses, Sheep Industry in Canada, Minerals and other Minerals, Origins of Soil and What Soil Contains, and Forests of Canada.	Spring Nature Calendar, the Toad, Germination Requirements, Preparation of Seed Bed, What Roots Take In, What Leaves Give Off, What Leaves Take In, Arbor Day and Insects.

After looking at this table, it becomes clear that the study of science (contextually) is very different than what it is today. The science curriculum (Nature Study and Agriculture) consists of the tools needed to become a farmer and to survive in that time. Farming and Agriculture, as well as the understanding behind the animals on the farm were essential to life in the 1920s. Children were instructed on how to manage the soil and the animals, and how the world around them worked.

This concept is very engaging, as everything that the children in the 20s were learning was directly related to the life they were living. The idea of Agriculture was becoming more popular as people started to move into more central towns and villages, and the community responsibility of raising and farming animals was becoming increasingly more popular. After observing the above chart, it becomes more apparent that as the children progressed through the school system their practical skills became increasingly more profound. They were not only becoming good educated students, but through their 'science' curriculum they were also becoming fine work hands, and an important part of the community.

This sort of educational relationship to real life work and study is still found today in the curriculum, it just appears in different forms. While in the 1920s the livelihood of the town/village was centered on agriculture and farming, today's society is focused more on evolution, and on advancement.

Our curriculum adapts to that just as the curriculum of the past adapts to their personal needs. Today we rely less on community agriculture and farming, and more on advancing our knowledge in other forms. The form of education and curriculum (especially the science based curriculum) of today is very much less involved with our children's actual lives. We study chemistry, biology and physics, but we have no idea what birds are around in what seasons, and what cuts of beef can be used for what. We know how to access a world of facts and information, but we have no idea how to shear a sheep, or make our own clothes. The way of life has changed, and with it so has the curriculum. The curriculum in the 1920s directly involved every child and taught them things that were practical and applicable in their every day lives.

Having a final look at the above chart suggests that the skills children learned in the twenties were very different than the ones they learn today, but that the method of learning is the same. There is still a profound thirst for knowledge, and a keen want for understanding. Children are still encouraged to observe, to model, and to prove different things, and are asked to demonstrate their knowledge through explanation and investigation.

Conclusion

It is clear from the study of the curriculum, that education has definitely evolved from the 1920s to present. Science has become more defined and definitely broader since the twenties. In the twenties it was important to teach the children the life skills they needed for survival in what was still a growing community, and while we are still growing today, it is evident that our concerns have changed.

The Nature Study and Agricultural Course focuses mainly on developing a community that is hands on, with students who have become workers through education. The concept is still the same in our decade; however the things learned have changed. For instance, we no longer focus mostly on how things are produced or how we come to acquire foods, and instead we focus on advancement of science and discovery. We, today, are thinking more outside the box, and are experimenting with things that go beyond our own community and in some cases even beyond our own planet.

This is not to say that these things were not focused on in the twenties, but that they were not the main concern. They were covered, but not applied likely because the technology just did not exist as of yet. For instance, the idea of stars and their study is much more advanced now, as is agriculture and the manufacture of food.