

FOUNDATIONS OF CURRICULUM BUILDING

BY

JOHN K. NORTON

*Professor of Education, Teachers College
Columbia University*

AND

MARGARET ALLTUCKER NORTON

*Formerly Associate Director, Research Division
National Education Association*



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PREFACE

THIS publication is the culmination of a project upon which the authors have worked over a period of ten years. It brings together from many sources materials most pertinent to curriculum building at the elementary-school level. It takes account of varying theories of curriculum building, presents a practical synthesis of research findings, and draws upon the results of advanced practice.

The authors have carefully examined literally thousands of research investigations, reports of national committees on curriculum revision, sociological and economic analyses and surveys, courses of study, and other pertinent sources. This material, previously available only in the form of un-co-ordinated, isolated, and often inaccessible monographs and articles, is focused on practical questions encountered in curriculum revision. The issues dealt with are those which wide contact with practical curriculum programs indicates to be crucial. Material drawn from the foregoing sources is presented against a background of educational philosophy which takes account of varying theories and views. Emphasis is placed upon the significance of the school in a democratic, industrial civilization and upon the contributions which education should make to social change.

The wealth of material available made it impracticable to present the results of all investigations bearing on each issue. Studies judged to be typical and reliable are cited. The aim was to consider all pertinent sources and to select from these on the basis of carefully developed criteria. Frequent footnotes throughout the book and critically selected and annotated bibliographies will permit curriculum committees to consult original sources.

The chapters use conventional subject classifications because most research bears on particular subject fields and most committees on curriculum revision organize along these lines. The publication will be useful, however, in building curricula of the integrated or activity type as well as those organized according to subject matter.

The authors have had in mind the needs of curriculum committees in state and local school systems, curriculum classes in colleges and universities, and superintendents of schools, teachers, principals, and supervisors. The publication is concerned with materials bearing on the determination of curriculum content and activities rather than with the organization and administration of programs of curriculum building.

Grateful acknowledgment is made to the members of the library staff of Teachers College, Columbia University, for their unfailing helpfulness and courtesy in making readily available the library's unequalled collection of educational books, magazines, and curriculum materials.

The authors are indebted to more than a score of specialists in various fields for the critical reading of various chapters, and gratefully acknowledge their constructive suggestions. All educators are indebted to the many research specialists, educational theorists, and practical school workers whose contributions make possible a publication of this type. Frequent citations throughout the book indicate the authors' indebtedness to these contributions.

JOHN AND MARGARET NORTON

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FOREWORD

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AS THIS book has progressed toward publication it has been a source of constant satisfaction. Now that it is ready to seek its fortune in the world, I have real pleasure in wishing it well.

At the outset I ought to say that there are two things which this book is not. It is not a treatment of the curriculum of the secondary school or college, and it is not a treatment of the *machinery* either of constructing or of administering the curriculum. There are other books for those purposes. The authors have done well to limit their subject to a field which can be reasonably covered in a book of reasonable size. If one wants detailed information about various ways of organizing curriculum committees, preparing courses of study, testing, installing, and supervising instructional materials, one should look elsewhere.

On the other hand, within the fields which the authors have chosen, *Foundations of Curriculum Building* deserves success. It is tolerant without being vague or formless, progressive without being viewy or impractical. It succeeds in being fair without being colorless, and when it takes on a positive tone it does so upon good grounds and without offense.

The "foundations" to which the title of the book refers are the results of reported investigations. The chapters devoted to the various subjects are based squarely upon research. At the same time, the authors make no fetish of scientific findings. They recognize the limitations of such findings and demand their interpretation by philosophy.

The authors are abundantly equipped for the task they have undertaken. The list of curriculum materials — yearbooks, bulletins, and reports — which they have written or to which they have contributed is impressive. They now draw upon their wide experience to make a book which has thus had time to mature.

So the many friends of the authors — of him stalwart and fearless, of her wise and gracious — will welcome this book which they have written together.

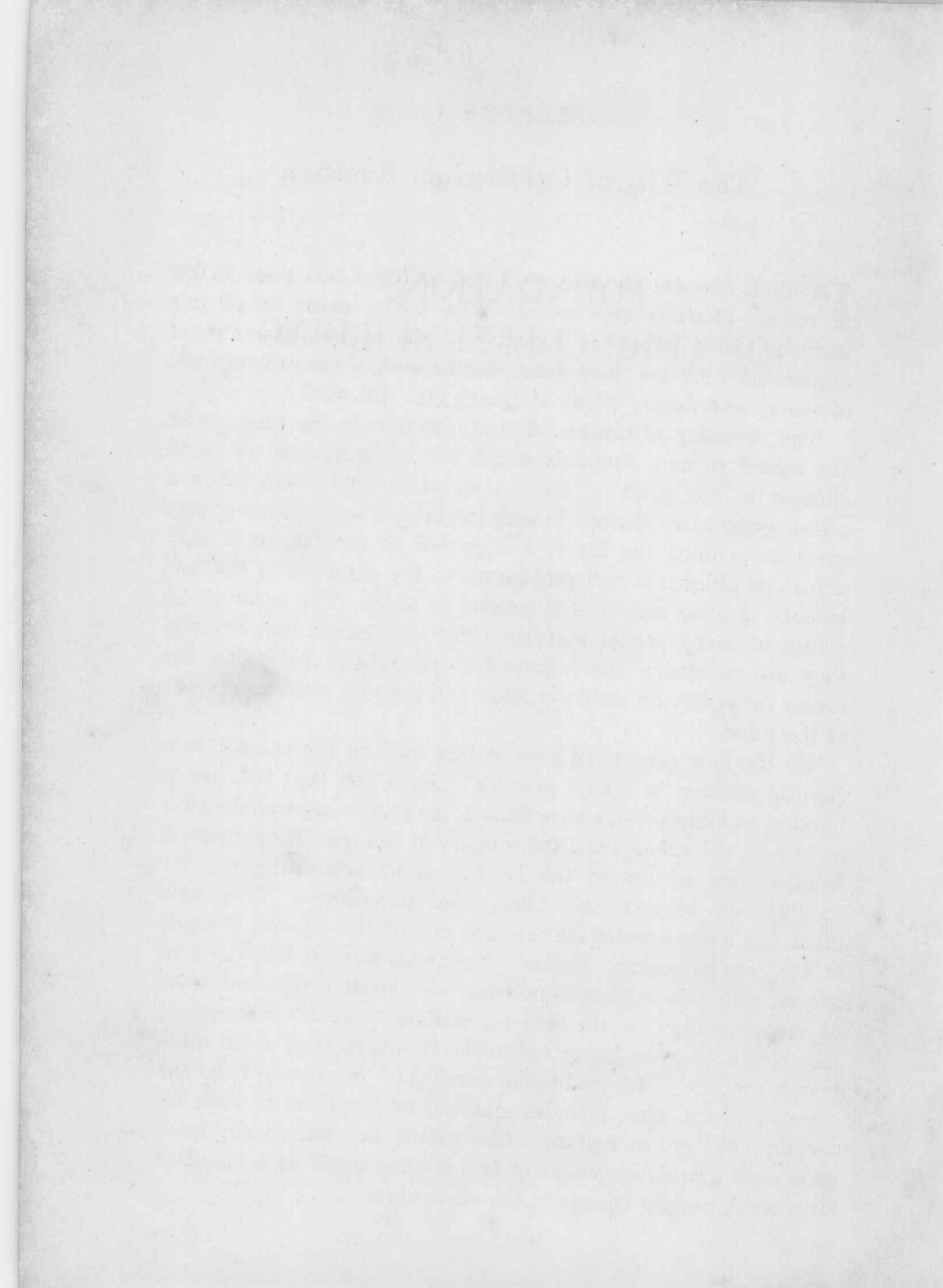
B. R. BUCKINGHAM

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FOUNDATIONS OF CURRICULUM BUILDING

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CHAPTER I

The Why of Curriculum Revision

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IN THE decades between 1915 and 1935 not less than 35,000 courses of study were issued. What is the reason for all this activity? Is it merely an example of the restless character of modern life? Or are there valid reasons back of the expenditures of energy and money which are going into this work?

The rewriting of courses of study represents the response of the school to new demands which are an outgrowth of rapid changes in our mode of life. A dynamic civilization offers a school system two choices. It may lag behind and become a mere excrescence upon the life it is supposed to nourish, or it may adjust its objectives and procedures to the demands of the turbulently flowing society it is created to serve. The latter is the choice of many school systems. Through curriculum revision they are redefining the purposes of education, improving the means for achieving these purposes, and keeping teachers abreast of the times.

Do the new conditions surrounding modern life call for substantial revision in school practice? Some feel that this age is making, as other periods have done in the past, exaggerated claims as to both the amount and the rapidity of change. They question whether new factors in the modern scene necessarily call for modification of well-tried educational procedures. They look upon the lessons which have come out of the age-old struggle of the race as eternal verities. Tolerance toward the views of others, open-mindedness concerning new ideas, a personal sense of responsibility for the general welfare, — such outcomes of schooling are no less important in the twentieth than in the nineteenth century. The traditional curriculum, winnowed from the harvests of the ages, includes material fundamental to both individual and group welfare. One should not uncritically seize upon each new development of this restless world as a mandate for a revolutionary change in the curriculum.

Bagley argues: "The theory that educational policies and programs must necessarily shift and change with every change in the conditions of social life is very far from being a sound theory."¹ On the other hand, the intelligent teacher will be anxious to avoid the mistake, frequently made in the past, of clinging to obsolete material. That profound changes are taking place in modern life cannot be gainsaid. Let us identify some of these and consider their significance for curriculum revision.

ROOT CAUSES OF CHANGE

Freedom of Thought and Scientific Method. No single factor has more profoundly affected our civilization than the rise of the scientific and experimental method and the extension of freedom of thought. One of the great turning points in human history was when Galileo dropped bodies of different weights from the Leaning Tower of Pisa and demonstrated, rather than argued, that they would reach the ground at the same moment. He was suspected of conjuring the devil into the one-hundred-pound weight which fell with the same speed as the one-pound weight.

The scientific method is being applied to increasing areas of human life, with results of the most far-reaching character. Yet it was only yesterday in the history of the human race that this method began to be used on any extensive scale. Almost insuperable obstacles confronted those who sought to employ it. Servetus was burned at the stake for his unorthodox description of the circulation of the blood.² Masters of medical oratory, proclaiming the spontaneity of living organisms, violently attacked Pasteur's germ theory. His ideas that the body could be protected against contagious diseases, or the poison neutralized when once within the body, were called Utopian dreams. As his facts accumulated through successive discoveries they were denied by all those who borrowed assurance from a mixture of

¹ From William C. Bagley, *Education, Crime, and Social Progress* (1932), p. 70. By permission of The Macmillan Company, publishers.

² Howard W. Haggard, *Devils, Drugs, and Doctors*, p. 147. Harper & Brothers, 1929.

ignorance and prejudice, and were even bitterly challenged by his best friends in the medical profession.¹

The right has been won to proclaim the findings of research in the physical and biological sciences. Freedom of thought in the social sciences is still challenged from many quarters. As yet relatively little scientific thought has been brought to bear on human affairs. There is every reason to believe, however, that bigotry and vested interest will be unable to prevent the application of scientific method to social problems. Already sufficient progress has been made to suggest that we are destined to see an acceleration of the changes which are growing out of the use of scientific and experimental methods, and the extension of the principle of freedom of thought to the field of the social sciences.

Many of the advances of civilization and the resulting changes are outgrowths of the use of the scientific method and the release of man's thought from stereotyped and authoritarian thinking.² Even though only a small percentage of our population is as yet scientifically minded, authoritarianism is on the defensive on all fronts. The mind of the masses has yet to be rescued from the clutches of ignorance, prejudice, and stereotyped thinking. Progress already made in this direction constitutes the most fundamental cause of current social change and offers education its greatest opportunity for significant service.

Man's Conquest of Power. A second root cause of change in our civilization is man's conquest of power resources. The physical power commanded by the United States completely transcends that of any other country, ancient or modern. If we employ the commonly used horsepower as our unit of measure (that is, the energy required to lift 33,000 pounds one foot in one minute), the United States commands approximately one and two-thirds billion horsepower of physical energy. This accumulation of power is unique. Ancient countries, such as Egypt,

¹ René Vallery-Radot, *The Life of Pasteur*, pp. 263-265. Doubleday, Doran and Company, 1916.

² See Charles A. Beard, *The Open Door at Home*, Chapter I, *The Crisis in Modern Thought*. The Macmillan Company, 1934.

Greece, and Rome, at the height of their prosperity, controlled about one twelfth of one horsepower per freeman. England in 1930 had about four horsepower per person, while the United States had approximately thirteen.

The significance of these figures will be better comprehended by converting horsepower into slave power. Assuming that one horsepower is the equivalent of about twenty-five slave power, the comparison is as follows:

Ancient nations	2 slaves per freeman
England in 1930	100 slaves per person
United States in 1930	325 slaves per person

The unique position of the United States is a comparatively recent phenomenon. As late as 1870 this country had at its command but one-half horsepower, or twelve slave power, per person, as compared with more than thirteen horsepower, or three hundred twenty-five slave power, per person in 1930. Within the last thirty years our total power resources have multiplied twenty-six fold.¹

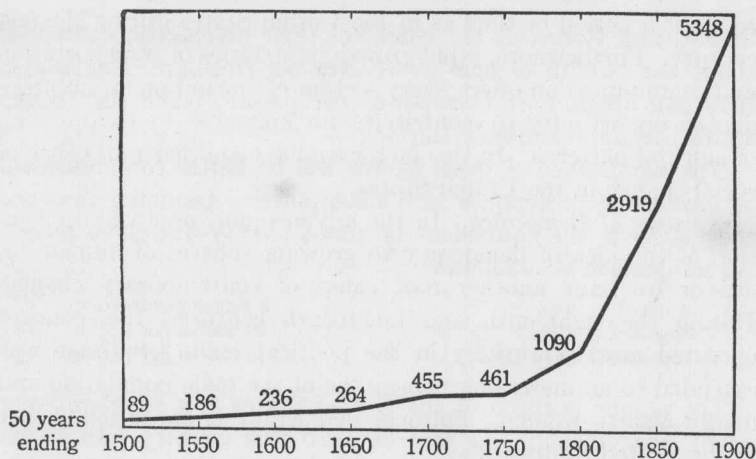
Invention. A rapidly mounting number of inventions has harnessed the growing resources of physical power. It is the machine in its various forms that makes power productive.

Until recently inventions were frequently the outcome of accidents or avocational interests. Cartwright, the inventor of the power loom, was a clergyman. McCormick, the inventor of the harvester, was originally a farmer. The inventor was commonly looked upon as a freakish if not unsocial person.

Within the twentieth century, invention has become a well-financed and highly specialized profession. The Bell Laboratories have employed as many as 5000 investigators and have spent \$19,000,000 in a single year for research leading toward new inventions.

The accompanying chart indicates that the number of inventions and scientific discoveries has grown by leaps and bounds. The United States Patent Office grants 50,000 patents a year.

¹ Carroll R. Daugherty, "Horsepower Equipment in the United States, 1869-1929," *The American Economic Review* (September, 1933), 23: 428-440.



The number of inventions and scientific discoveries by half centuries from 1500 to 1900¹

The effect of this factor in promoting social change is stated as follows by Ogburn :

It may be argued with some success that the origins of most of the innumerable social changes occurring today lie in new inventions of a mechanical nature and in the scientific discoveries of natural science, though we cannot always foretell from the new inventions or discoveries what specific social changes will be precipitated.²

Diversity of Cultural Backgrounds. The bringing together of peoples of diverse cultural backgrounds always tends to make for intellectual ferment and social change. The infiltration of new mores and ideals destroys likemindedness, the father of static civilizations.

There are few instances in the world's history in which so many peoples of diverse cultural origins have been brought together in

¹ President's Research Committee on Social Trends, *Recent Social Trends in the United States*, p. 126.

² William F. Ogburn, *Recent Social Changes in the United States since the World War and Particularly in 1927*, p. 27. The University of Chicago Press, 1929. Quoted by permission.

so short a period of time as in the United States during the last century. Furthermore, rapid growth in facilities of transportation and communication offers every section of the nation an unprecedented opportunity to contribute its influence to the molding of cultural patterns. In this factor we have another root cause of social change in the United States.

Advance of Democracy. In the advance and practical application of the idea of democracy to growing spheres of human endeavor we have another root cause of contemporary change. During the eighteenth and nineteenth centuries this concept operated most powerfully in the political realm. Suffrage was extended to an increasing percentage of the male population and finally also to women. Political democracy is an accepted fact in the United States today.

The twentieth century is bringing a demand for economic and cultural equality comparable to that which was made for political equality a century ago. Laski points out: "In a civilization like ours, where the common man has tasted political power, it is psychologically inevitable that he should use his authority to increase his share in the common stock."¹

Great extremes exist today in the incomes of those at the top and at the bottom of the economic scale.² If Laski's principle has validity, democracy will continue to press, through taxation and other means, for a more equitable distribution of income. This pressure is already having its effect in a number of ways. The right of every individual to at least a subsistence income was generally recognized in practice during the depression. Great corporations and privately controlled universities today claim to be public servants. Even the most ruthless private business finds it necessary to justify its existence before the bar of public opinion. The misuse of economic energy is no longer defended in theory as a right of ownership. Profits which are not an outcome of

¹ Harold J. Laski, "Freedom in Danger," *The Yale Review* (Spring, 1934), 23: 544.

² Maurice Leven, Harold G. Moulton, and Clark Warburton, *America's Capacity to Consume*, pp. 227-229. The Brookings Institution, Washington, D. C., 1934.

genuine economic productivity are on the defensive. We have come a long way from the time when an Egyptian ruler found it possible to consume the labor of 100,000 men for twenty years in the construction of a pyramid. The advance of the idea of democracy is effecting profound changes in political, economic, cultural, and other spheres of social relations.

Recent developments in certain European countries may cause some to question whether the principle of democracy is to continue and advance in the twentieth century as it did in the nineteenth. No one can answer this question with certainty today. It is interesting to note, however, that the demand of the common man for greater economic security is a primary force which has operated to bring about the European dictatorships. Democracy still operates in the United States, and undoubtedly constitutes the fundamental factor responsible for the extension of such taxes as those on income and inheritance, and the development of social-security legislation of various types.

End of the Frontier in the United States. Until the beginning of the twentieth century the open frontier exercised a variety of important influences on economic and social life. The open West offered a cure for unemployment and many other problems. It is no longer possible to escape unemployment by emigrating to the Middle West or even to California. The frontier which offered free land and opportunity to start life anew is gone. The individual can no longer run away from his problems; he must solve them through governmental and other co-operative means. This fact is already potently influencing the development of national thought, life, and character. It will continue to compel social adjustments of great significance.

MAJOR CHANGES OF CONTEMPORARY CIVILIZATION

The foregoing root causes of change are bringing about a series of revolutionary transitions in contemporary life. Let us briefly describe a few of these transitions and consider their implications for curriculum revision.

Transition from an Agrarian to an Industrial Civilization. A century ago 80 per cent of the people of the United States lived on farms. Today this percentage is 25. In 1830 only 7 per cent of the population lived in cities of 8000 or more, as contrasted with 49 per cent in 1930.¹ This change is of tremendous educational significance.

In the rural environment in which the great majority of children lived a few generations ago, the child learned about the work of the world from actual participation in it. Most of the children's time out of school was taken up by the chores of the farm. When these were done, field or stream beckoned. When children reached maturity, they entered no new world, but one with which they had had close contact from early childhood. Under the direction of their parents they had learned the significance of every farm operation, both from observation and from participation. Under such conditions the child acquired most of the fundamental elements of an education out of school. Today millions of children live under greatly changed conditions.

The Growth of Great Cities. In the United States since 1890 urban population has increased 214 per cent, that is, from 22,000,000 to 69,000,000. In the same period rural population increased 32 per cent, or from 41,000,000 to 54,000,000. When the Civil War began, there were three cities over 200,000 in population. The 1930 census revealed forty-five cities of this class. On a clear day, from the top of the Empire State Building in New York, one may view the habitations of as many people as lived in the fifty largest cities in the United States in 1890.

Here we have a new factor in contemporary life,— the concentration of enormous populations in small and highly congested areas, — which has proceeded at an unparalleled pace and which has brought with it problems of the most fundamental importance to the curriculum of the school. The significance of this new factor in American life was stated at the White House Conference in the words of the following extract :

¹ *Fifteenth Census of the United States, 1930, 2: 9.*