Curriculum Construction

W. W. CHARTERS

Professor of Education, Carnegie Institute of Technology

New York

THE MACMILLAN COMPANY

1923

TO MY WIFE

JESSIE ALLEN CHARTERS

PREFACE

The school curriculum is the latest great social agency to feel the effect of the theory of evolution. Biology for sixty years has recognized the fact that living structure is modified to serve the functions of plants and animals. Sociology, economics, and history accept the fact that the forms of institutions are determined by the attempts of man to make his environment minister to his needs. Psychology has developed a functional and behavioristic point of view, and in philosophy pragmatism has achieved a permanent place.

While all these revolutionary changes have been under way, the theory of the formation of the curriculum has been slow to react to them. The curriculum builder has felt, like his pre-evolutionary prototype who clung to the theory of epigenesis, that the specialists who organize the subjects to meet the needs of their groups have developed the best possible curriculum. The force of evolutionary theory has been negatived by the strength of the doctrine of the transfer of training and by the prestige of the scientist. It has been held that the training of the faculties could be secured by already existing forms of subject matter and that change in structure should therefore be resisted. To add to this conviction, the prestige of the scientist induced the lowly school teacher to believe that a structure built in conformity with his needs was equally suitable and satisfactory for the needs of the layman.

Long before Darwin formulated his theories there was much intense, destructive criticism of the subject matter taught in the elementary schools. Particularly from the time of Rousseau educational theorists and an innumerable number of laymen and teachers have contended that the content of school subjects does not fulfill the functions of popular education. This criticism has

resulted in some modification by the elimination and addition of some subjects and parts of subjects, as is seen when we note the differences in the content of the school curriculum during the last fifty years. But these have been changes in detail; the cedar roof has been changed to slate, the veranda has been changed into a sleeping porch, a sun parlor has been added, a wing built on, and the outside painted: but the house still stands essentially as it came from the architect and the builder.

In the last ten years, however, the criticism has begun to take constructive shape and a number of pioneer studies have been made from the functional point of view. Functions for subjects have been set up and the structures which will realize the functions have been derived. This has resulted in a considerable body of knowledge which can be collected and interpreted in terms of the functional theory of curriculum construction. To this task the present volume addresses itself.

The author wishes to acknowledge his appreciation for the services rendered him by many educators, including Bonser, Bobbitt, Coursault, Dewey, Meriam, and Yocum. Particularly does he wish to express his appreciation of the assistance of his former colleague, B. H. Bode, whose criticism of the theoretical principles underlying the treatment has been a stimulus to clarifying analysis, especially in the field of ideals and activities.

W. W. C

July, 1922.

CONTENTS

PART I

PART I

PRINCIPLES OF CURRICULUM CONSTRUCTION

Chapter I

THE THEORY OF CURRICULUM CONSTRUCTION

§1—Introduction

The tardiness of change. — One would expect that those profound changes in the aims of education which follow revolutions in world thought would be reflected in equally fundamental changes in the curriculum of the school; but in practice the changes have always been tardy and have seldom been complete. For instance, it would be expected that with the wholesale acceptance of Christianity by the people of Europe, the quadrivium and trivium of Greek civilization would have been supplanted by books which more directly taught the rudiments of Christian culture. In this case the expected did happen to the extent that the administrators of the Christian church caused the establishment of the catechetical and catechumenal schools. But as soon as instruction in the practices of the Christian church had been taught to those who so recently had been pagans, then the quadrivium and the trivium regained ascendancy and long remained the basis of school instruction in Christian Europe.

The same fact is noticeable in the cultural revolution of the Renaissance, and in the period which followed. During the period of the Renaissance the ideal of ancient culture dominated the schools of Europe and led to the inclusion of the classics in the courses of study. Aristotle, who had been forgotten for many centuries, again came into importance, and the classical group which he dominated furnished the content of the curriculum.

As time went on, the individual was discovered, and thus was initiated a great world movement which was reflected in the statement of the aims of education by Rousseau and those who amplified and refined his point of view. But, through all these changes in

theory concerning the aim of education, the actual curriculum in operation in the schools changed comparatively little. Again in the present period, when world thought has been turning to a consideration of social factors and ideals, the theory of the aims of education has been modified but the changes in the curriculum in actual operation are still quite inconsiderable.

The causes. — The cause for this tardiness lies partly in the fact that the mechanics of such an institution as the public schools are so complicated that an appreciable time must elapse before changes are felt; but the cause lies much more truly in other factors, of which three are of enough importance to bear elaboration.

Briefly stated, the curriculum has been slow to respond to the changing statements of the aim of education because (1) those who have formulated the aims of education have not taken into account the activities which individuals carry on. Rather have they laid stress merely upon ideals from which a curriculum can be derived. As the result of this failure, (2) the curriculum has been under the domination of the idea that the youth should be given a bird's-eye view of the knowledge of the world rather than a compendium of useful information. Furthermore, (3) when the material in this curriculum has been criticised as lacking practicalness, the school administrators, with whom the defence of the curriculum rests, have until quite recently justified it by an appeal to the doctrines of formal discipline and the transfer of training.

The standards of our day demand that our courses of study be derived from objectives which include both ideals and activities, that we should frankly accept *usefulness* as our aim rather than *comprehensive knowledge*, and that no fictitious emphasis should be placed upon the value of formal discipline.

A description of the effect of these demands upon curriculum construction constitutes the purpose of the author in the preparation of this text. We shall first of all elaborate and criticize the theories of curriculum construction as observed in the history of education, then analyze and describe the recent technique of curriculum construction, and finally present a body of the more significant studies which have been made within the last decade.

§2—Aims, Ideals, and Activities

Aims precede curriculum change. — Changes in the curriculum are always preceded by modifications in our conception of the aim of education. In the organized writings of educators, fundamental changes in the curriculum have been advocated only after the writers have brought forward a statement of aim differing from the current idea. Among these writers we find Plato describing the qualities of the perfect warrior guardian of the state, before determining what the training of such an individual should be. Similarly, Comenius presents the aims of virtue, piety, and learning before describing his well-known curriculum. Rousseau likewise justified his course of study by an appeal to certain assumptions concerning the development of the "nature" of the child.

In the less formal and more fluid movements of thought of any generation, including our own, at the time when the curriculum is in the making, we find that only after such aims as social efficiency have been discussed for a number of years in the educational press and forum do changes in the curriculum begin to appear. No wholesale change occurs, but bit by bit additions are proposed or eliminations advocated. Indeed it may be said that a change in the curriculum runs on the average ten years behind the advocating of a change in the aim of education. And for the curriculum change to become large enough to be noticed, a much longer period of incubation is necessary. It is rather generally the case that most of the theoretical discussions among educators as to changing the statement of aim fail to modify the practical curriculum as it is taught in the schoolroom. But even though a change comes slowly and sometimes seems infinitesimal, it is always preceded by a new statement of the aim of education.

Uses of the aim. — This preliminary statement of aim is a prerequisite to both selection and use. The inheritance handed down through the schools to the young is so massive that it can never be completely assimilated. Selection is, therefore, neces-

sary, and a basis of selection must be determined. This is obtained through the statement of aim. For instance, if piety is to be the aim of education, then it is necessary that the course of study should contain an adequate amount of religious material. If, on the other hand, social efficiency is set up as the aim of education, it is obvious that the activities with which people are engaged in conjunction with other people should receive primary emphasis. If the earning of a living through a vocation be set up as the primary aim of education in any school, then it is natural that vocational technique should be included in the course of study. These illustrations make clear the fact that an aim is prerequisite to selection.

Moreover, the aim is necessary for use. Information has no value considered apart from its function. For different purposes it must be used in different ways, and thus assumes various forms. If topics are studied with the outstanding purpose of teaching morality, the moral implications will be stressed; while if training in social efficiency is the aim of the curriculum, then the topics will be considered from the point of view of their usefulness in assisting the individual to become the servant or the leader of others. Facts in the special subjects, as in chemistry, are essentially different facts when taught in the vocational course in agriculture from what they are in a course for pharmacists. Though the facts concerning carbon may seem to be the same facts irrespective of use, fundamentally carbon presents a different body of subject matter in relation to dietetics from carbon as studied for mineralogy; only a few elementary facts are the same.

This idea may perhaps be stated more clearly if we look upon subject matter as containing not only facts but also the uses of those facts. For instance, the study of carbon gives us a few elementary facts about carbon, and in addition to these it gives us what we call the applications of those facts to other fields; and both the elementary facts and their applications are essentially parts of the subject matter to be taught.

The failure of investigators. — While writers on the curriculum have begun with the statement of aim, none has been able

to derive a curriculum logically from his statement of aim. In every case he has made an arbitrary mental leap from the *aim* to the *subject matter*, without providing us with adequate principles such as would bridge the gap—without presenting steps which irresistibly lead us from aim to selection of material. This may seem to be a sweeping statement, but a few illustrations will demonstrate its accuracy.

Plato. — In Plato's *Republic* the author states his aim clearly as follows: "Then in our judgment the man whose natural gifts promise to make him the perfect guardian of the state will be philosophical, high-spirited, swift-footed, and strong." Proceeding with his dialectic he says: "This, then, will be the original character of our guardians, but in what way shall we rear and educate them?" This query he treats as follows: "What, then, is the education to be? Perhaps we could find hardly a better than that which the experience of the past has already discovered, which consists, I believe, in gymnastics for the body and music for the mind." Subsequently he analyzes gymnastics and music into their different divisions, and argues for the inclusion of such narratives, fables, and poetry as present certain ideals in the proper form, and adds to these certain types of melodies and songs. After analyzing his course in music in this way he gives a slight description of the course in gymnastics, while paying little attention to the content but emphasizing the ideals of temperateness, happiness, and health of body.

The mental leap occurs at the point between his characterization of the ideal guardian ("philosophical, high-spirited, swift-footed, and strong") and his prescription of "music and gymnastics." Plato has not taken us into his confidence and let us see why he thinks that the "philosophical" disposition can be best trained through "music and gymnastics." He has not indicated what particular part of the censored literature is to be selected, nor has he shown what gymnastic exercises should be included in the curriculum. Is there no other material through which the guardian may be made "high-spirited"? Should not Plato specify some of the exercises which will best promote the

"swift-footed" athlete? Moreover, we are tempted to ask whether such a group of ideals might not also hold for the youthful citizens of America, and whether—if so—the same ideals would call for an identical course of study.

Plato's curriculum is not an adequate system of instruction for warriors. Within the last few years we have seen the spectacle of "a million men springing to arms" who were high-spirited and strong, but certainly were not perfect soldiers. Before they could become "perfect guardians of the state" their curriculum was made to include much besides "fables and poetry, melodies, song, and gymnastics." They had to learn to march, to shoot, to thrust with the bayonet, to fly in airplanes, and to sail the seas. Nor was Plato's curriculum any more adequate for the warriors of ancient Athens. When his men were trained in music and gymnastics they still had much to learn before they could become perfect guardians of the state: they needed to be able to carry on all the forms of ancient warfare.

Comenius.—The aims and the curriculum of Comenius present the same deficiency. This great educator assumes the aim of education to be that of bringing to maturity the seeds of learning, virtue, and piety planted within us by Nature. He then outlines his course for the vernacular school as follows (after Quick): "In this school the children should learn—first, to read and write the mother-tongue well, both with writing and printing letters; second, to compose grammatically; third, to cipher; fourth, to measure and weigh; fifth, to sing, at first popular airs, then from music; sixth, to say by heart sacred psalms and hymns; seventh, catechism, Bible history, and texts; eighth, moral rules with examples; ninth, economics and politics, as far as they could be understood; tenth, general history of the world; eleventh, figure of the earth and motion of the stars, etc., physics and geography, especially of native land; twelfth, general knowledge of arts and handicrafts."

This curriculum of Comenius cannot be derived logically from his three-fold aim of "learning, virtue, and piety." *Learning* as an aim will give no basis of selection unless one could expect to

learn everything. The interest of Comenius in his "pansophy" indicates his belief that in a general way one might encompass all knowledge, but only in a general way. The details of knowledge could not be learned, because that task would be too great for the time of any individual. Selection is therefore necessary, even in a "pansophy," and *learning* as such will not provide the basis for selection. Nor do *virtue* and *piety* provide this basis. Will ciphering, singing, or economics assist in any particularly valuable way in promoting these two ends? Or, to carry the question farther, what details of ciphering or physics will be most valuable in promoting *virtue* and *piety?* Clearly, since one fact is as virtuous as another, subject matter cannot be derived from *virtue* as the aim of education.

The cause of their failure. — The impossibility of deriving subject matter from the aims of Plato and Comenius is due to the fact that their aims are statements of *ideals isolated from activities.* For the curriculum is properly concerned not only with the ideals which govern life, but also with the things which a person does and thinks about. A virtuous carpenter does not perform the same actions, nor does he meet the same problems, as a virtuous blacksmith. A pious business man receives a different education from a pious doctor. A virtuous and pious Chinaman thinks and acts upon matters different from those which engage the attention of a similarly virtuous and pious American. The ideals are the same; the lives are widely different. It would be futile to teach the Chinaman the same curriculum as the American unless the intention were to Americanize him.

The ideals are the same, but the curriculum is different; and it is different because *it is derived from both ideals and activities.* Some ideals, such as virtue, or swift-footedness, piety, or social efficiency, must be set up in the system of education; but in order to determine the curriculum it is absolutely essential for a teacher to know the activities, problems, thoughts, or needs which these ideals are to influence and control.

Plato had a golden opportunity to set a new style in curriculum construction when he described the education of the