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A MODERN SCHOOL

BY
ABRAHAM FLEXNER

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Report of the Secretary of the General Education Board, 1914-1915, paper, 96 pages.

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PREFATORY NOTE

At several of its recent meetings, the subject of elementary and secondary education has been discussed by the General Education Board. President Eliot's paper, entitled "Changes Needed in American Secondary Education"¹ was prepared in this connection and was the centre of discussion at one meeting; the present paper formed the topic of discussion at another. The attitude of the Board towards the position taken in these two papers is expressed in the following, quoted from the minute adopted by the Board:

"The General Education Board does not endorse or promulgate any educational theory, but is interested in facilitating the trial of promising educational experiments under proper conditions.

"The Board authorizes the publication of these papers with a request for criticism and suggestions, and an expression of opinion as to the desirability and feasibility of an experiment of this type."

¹Published by the General Education Board as No. 2 in its series of Occasional Papers.

A MODERN SCHOOL

BY
ABRAHAM FLEXNER

CURRENT EDUCATION

AS PRESIDENT ELIOT has so clearly pointed out in his paper on the "Changes Needed in American Secondary Education," tradition still too largely determines both the substance and the purpose of current education. A certain amount of readjustment has indeed taken place; in some respects almost frantic efforts are making to force this or that modern subject into the course of study. But traditional methods and purposes are strong enough to maintain most of the traditional curriculum and to confuse the handling of material introduced in response to the pressure of the modern spirit. It is therefore still true that the bulk of the time and energy of our children at school is devoted to formal work developed by schoolmasters without close or constant reference to genuine individual or social need. The subjects in question deal predominantly with words or abstractions, remote from use and experience; and they continue to be acquired by children because the race has formed the habit of acquiring them, or, more accurately, the habit of going through the form of acquiring them, rather than because they serve the real purposes of persons living to-day. Generally speaking, it may be safely affirmed that the subjects commonly taught, the time at which they are taught, the manner in which they are taught, and the amounts taught are determined by tradition, not by a fresh and untrammelled consideration of living and present needs.

I am not forgetful of the fact that the moment a student takes fire in studying any subject, no matter how remote or abstract, it assumes a present reality for him. Thus, sometimes through the personality of the teacher, less often through the congeniality of the subject matter, Latin and algebra may seem as real to particular students as woodwork, Shakespeare, biology or current events. It still remains true, however, that these cases are highly exceptional; and that most children in the elementary and high schools struggle painfully and ineffectually to bring the subject matter of their studies within a world that is real and genuine for them. The best of them succeed fitfully; most of them never succeed at all.

It is perhaps worth while stopping long enough to show by figures the extent to which our current teaching fails. Complete statistics which would tell us how many of all the pupils who study Latin and algebra and geometry fail to master them do not exist. But we know that a large percentage of the better students of these subjects try the College Entrance Examinations, and that for these examinations many receive special drill in addition to the regular teaching. Now in the examinations held by the College Entrance Board in 1915, 76.6 per cent. of the candidates failed to make even a mark of 60 per cent. in Cicero; 75 per cent. failed to make a mark of 60 per cent. in the first six books of Vergil, every line of which they had presumably read and re-read; 69.7 per cent. of those examined in algebra from quadratics on failed to make as much as 60 per cent.; 42.4 per cent. failed to make 60 per cent. in plane geometry. What would the record be if all who studied these subjects were thus examined by an impartial outside body? Probably some of those who fail do not do themselves justice; but as many—perhaps more—of the few who reach the really low mark of 60 per cent. do so by means of devices that represent stultification rather than intelligence. For nothing is commoner in the teaching of ancient languages and formal mathematics than drilling in arbitrary signs by means of which pupils determine mechanically what they should do, without intelligent insight into what they are doing. It is therefore useless to inquire whether a knowledge of Latin and mathematics is valuable, because pupils do not get it; and it is equally beside the mark to ask whether the effort to obtain this knowledge is a valuable discipline, since failure

is so widespread that the only habits acquired through failing to learn Latin or algebra are habits of slipshod work, of guessing and of mechanical application of formulæ, not themselves understood.

A word should perhaps be said at this point by way of explaining why the Germans appear to succeed where we fail. There are two reasons: in the first place, the German gymnasium makes a ruthless selection. It rejects without compunction large numbers whom we in America endeavor to educate; and on the education of this picked minority it brings to bear such pressure as we can never hope to apply—family pressure, social pressure, official pressure. Under such circumstances, success is possible with small numbers; but the rising tide of opposition to the classical gymnasium and the development of modern schools with equivalent privileges show that even in Germany the traditional education is undermined.

But not only do American children as a class fail to gain either knowledge or power through the traditional curriculum—they spend an inordinately long time in failing. The period spent in school and college before students begin professional studies is longer in the United States than in any other western country. An economy of two or three years is urgently necessary. The Modern School must therefore not only find what students can really learn—it must feel itself required to solve its problem within a given number of years—the precise number being settled in advance on social, economic and professional grounds. Its problem may perhaps be formulated in these terms: how much education of a given type can a boy or girl get before reaching the age of, let us say, twenty, on the theory that at that age general opportunities automatically terminate?

A MODERN CONCEPTION OF EDUCATION

Before I undertake to do this, it is necessary to define education for the purposes of this sketch; and for obvious reasons this definition will be framed from a practical rather than from a philosophical point of view. All little children have certain common needs; but, beginning with adolescence, education is full of alternatives. The education planned for children who must leave school at fourteen necessarily differs in extent and thus to a degree in content from that feasible for those who can remain, say, two years

longer, so as to acquire the rudiments of a vocation. Still different are the possibilities for children who have the good fortune to remain until they are eighteen or twenty, reasonably free during this lengthened period from the necessity of determining procedure by other than educational considerations. I assume that the Modern School of which we are now speaking contemplates liberal and general education in the sense last-mentioned. With regard to children who expect to enjoy such opportunities, what do we moderns mean when we speak of an educated man? How do we know and recognize an educated man in the modern sense? What can he do that an uneducated man—uneducated in the modern sense—cannot do?

I suggest, that, in the first place, a man educated in the modern sense, has mastered the fundamental tools of knowledge: he can read and write; he can spell the words he is in the habit of using; he can express himself clearly orally or in writing; he can figure correctly and with moderate facility within the limits of practical need; he knows something about the globe on which he lives. So far there is no difference between a man educated in the modern sense and a man educated in any other sense.

There is, however, a marked divergence at the next step. The education which we are criticising is overwhelmingly formal and traditional. If objection is made to this or that study on the ground that it is useless or unsuitable, the answer comes that it "trains the mind" or has been valued for centuries. "Training the mind" in the sense in which the claim is thus made for algebra or ancient languages is an assumption none too well founded; traditional esteem is an insufficient offset to present and future uselessness. A man educated in the modern sense will forego the somewhat doubtful mental discipline received from formal studies; he will be contentedly ignorant of things for learning which no better reason than tradition can be assigned. Instead, his education will be obtained from studies that serve real purposes. Its content, spirit and aim will be realistic and genuine, not formal or traditional. Thus, the man educated in the modern sense will be trained to know, to care about and to understand the world he lives in, both the physical world and the social world. A firm grasp of the physical world means the capacity to note and to interpret phenomena; a firm grasp of the social world means a compre-

hension of and sympathy with current industry, current science and current politics. The extent to which the history and literature of the past are utilized depends, not on what we call the historic value of this or that performance or classic, but on its actual pertinency to genuine need, interest or capacity. In any case, the object in view would be to give children the knowledge they need, and to develop in them the power to handle themselves in our own world. Neither historic nor what are called purely cultural claims would alone be regarded as compelling.

Even the progressive curricula of the present time are far from accepting the principle above formulated. For, though they include things that serve purposes, their eliminations are altogether too timid. They have occasionally dropped, occasionally curtailed, what experience shows to be either unnecessary or hopelessly unsuitable. But they retain the bulk of the traditional course of study, and present it in traditional fashion, because an overwhelming case has not—so it is judged—yet been made against it. If, however, the standpoint which I have urged were adopted, the curriculum would contain only what can be shown to serve a purpose. The burden of proof would be on the subject, not on those who stand ready to eliminate it. If the subject serves a purpose, it is eligible to the curriculum; otherwise not. I need not stop at this juncture to show that “serving a purpose,” “useful,” “genuine,” “realistic,” and other descriptive terms are not synonymous with “utilitarian,” “materialistic,” “commercial,” etc., for intellectual and spiritual purposes are genuine and valid, precisely as are physical, physiological, and industrial purposes. That will become clear as we proceed.

It follows from the way in which the child is made and from the constitution and appeal of modern society that instruction in objects and in phenomena will at one time or another play a very prominent part in the Modern School. It is, however, clear that mere knowledge of phenomena, and mere ability to understand or to produce objects falls short of the ultimate purpose of a liberal education. Such knowledge and such ability indubitably have, as President Eliot's paper pointed out, great value in themselves; and they imply such functioning of the senses as promises a rich fund of observation and experience. But in the end, if the Modern School is to be adequate to the need of modern life, this concrete

training must produce sheer intellectual power. Abstract thinking has perhaps never before played so important a part in life as in this materialistic and scientific world of ours—this world of railroads, automobiles, wireless telegraphy, and international relationships. Our problems involve indeed concrete data and present themselves in concrete forms; but, back of the concrete details, lie difficult and involved intellectual processes. Hence the realistic education we propose must eventuate in intellectual power. We must not only cultivate the child's interests, senses, and practical skill, but we must train him to interpret what he thus gets to the end that he may not only be able to perceive and to do, but that he may know in intellectual terms the significance of what he has perceived and done. The Modern School would prove a disappointment, unless greater intellectual power is procurable on the basis of a realistic training than has been procured from a formal education, which is prematurely intellectual and to no slight extent a mere make-believe.

A MODERN CURRICULUM

Aside from the simply instrumental studies mentioned—reading, writing, spelling and figuring—the curriculum of the modern school would be built out of actual activities in four main fields which I shall designate as science, industry, æsthetics, civics. Let me sketch briefly a realistic treatment of each of these fields.

The work in science would be the central and dominating feature of the school—a departure that is sound from the standpoint of psychology and necessary from the standpoint of our main purpose. Children would begin by getting acquainted with objects—animate and inanimate; they would learn to know trees, plants, animals, hills, streams, rocks, and to care for animals and plants. At the next stage, they would follow the life cycles of plants and animals and study the processes to be observed in inanimate things. They would also begin experimentation—physical, chemical, and biological. In the upper grades, science would gradually assume more systematic form. On the basis of abundant sense-acquired knowledge and with senses sharpened by constant use, children would be interested in problems and in the theoretic basis on which their solution depends. They will make and understand a fireless cooker, a camera, a wireless telegraph; and they will ultimately

deal with phenomena and their relations in the most rigorous scientific form.

The work in science just outlined differs from what is now attempted in both its extent and the point of view. Our efforts at science teaching up to this time have been disappointing for reasons which the above outline avoids: the elementary work has been altogether too incidental; the advanced work has been prematurely abstract; besides, general conditions have been unfavorable. The high school boy who begins a systematic course of physics or chemistry without the previous training above described lacks the basis in experience which is needed to make systematic science genuinely real to him. The usual textbook in physics or chemistry plunges him at once into a world of symbols and definitions as abstract as algebra. Had an adequate realistic treatment preceded, the symbols, when he finally reached them, would be realities. The abyss between sense training and intellectual training would thus be bridged.

Of coördinate importance with the world of science is the world of industry. The child's mind is easily captured for the observation and execution of industrial and commercial processes. The industries growing out of the fundamental needs of food, clothing and shelter; the industries, occupations and apparatus involved in transportation and communication—all furnish practically unlimited openings for constructive experiences, for experiments and for the study of commercial practices. Through such experiences the boy and girl obtain not only a clearer understanding of the social and industrial foundations of life, but also opportunities for expression and achievement in terms natural to adolescence.

Under the word "æsthetics"—an inappropriate term, I admit—I include literature, language, art, and music—subjects in which the schools are mainly interested on the appreciative side. Perhaps in no other realm would a realistic point of view play greater havoc with established routine. The literature that most schools now teach is partly obsolete, partly ill-timed, rarely effective or appealing. Now nothing is more wasteful of time or in the long run more damaging to good taste than unwilling and spasmodic attention to what history and tradition stamp as meritorious or respectable in literature; nothing more futile than the make-believe by which children are forced to worship as "classics" or "standards" what

in their hearts they revolt from because it is ill-chosen or ill-adjusted. The historic importance or inherent greatness of a literary document furnishes the best of reasons why a mature critical student of literature or literary history should attend to it; but neither consideration is of the slightest educational cogency in respect to a child at school. A realistic treatment of literature would take hold of the child's normal and actual interests in romance, adventure, fact or what not, and endeavor to develop them into as effective habits of reading as may be. Translations, adaptations and originals in the vernacular—old and new—are all equally available. They ought to be used unconventionally and resourcefully, not in order that the child may get—what he will not get anyway—a conspectus of literary development; not in order that he may some day be certificated as having analyzed a few outstanding literary classics; but solely in order that his real interest in books may be carried as far and as high as is for him possible; and in this effort, the methods pursued should be calculated to develop his interest and his taste, not to “train his mind” or to make of him a make-believe literary scholar. There would be less pretentiousness in the realistic than there is in the orthodox teaching of literature; but perhaps in the end the child would really know and care about some of the living masterpieces and in any event there might exist some connection between the school's teaching and the child's spontaneous out-of-school reading.

Of the part to be played by art and music I am not qualified to speak. I do not even know to what extent their teaching has been thought of from this point of view. I venture to submit, however, that the problem presented by them does not differ in principle from the problem presented by literature. Literature is to be taught in the Modern School primarily for the purpose of developing taste, interest and appreciation, not for the purpose of producing persons who make literature or who seem to know its history; we hope to train persons, not to write poems or to discuss their historic place, but to care vitally for poetry—though not perhaps without a suspicion that this is the surest way of liberating creative talent. The Modern School would, in the same way, endeavor to develop a spontaneous, discriminating and genuine artistic interest and appreciation—rather than to fashion makers of music and art. It would take hold of the child where he is and endeavor to develop

and to refine his taste; it would not begin with "classics" nor would it necessarily end with them. By way of showing, however, that a real curriculum is not synonymous with an easy curriculum, I may say that, if, as one factor in appreciation, it should be decided that all children should at least endeavor to learn, say, some form of instrumental music, the fact that there are certain advantages to be gained from an early start must decide the "when" and the "how," regardless of the child's inclination or disinclination. It is none the less true, however, that the child's interests and capacities are in general so fundamental and so significant that the question here raised is not often presented. Most of what a child should do coincides with its own preference, or with a preference very readily elicited. But preference or lack of preference on the child's part is not a sole or final consideration.

The study of foreign languages must be considered in this connection. The case of Latin and Greek will be taken up later; German, French, perhaps other languages are now in question. Languages have no value in themselves; they exist solely for the purpose of communicating ideas and abbreviating our thought and action processes. If studied, they are valuable only in so far as they are practically mastered—not otherwise; so at least the Modern School holds. From this standpoint, for purposes of travel, trade, study, and enjoyment, educated men who do not know French and German usually come to regret it keenly. When they endeavor during mature life to acquire a foreign tongue, they find the task inordinately difficult and the results too often extremely disappointing. It happens, however, that practical mastery of foreign languages can be attained early in life with comparative ease. A school trying to produce a resourceful modern type of educated man and woman would therefore provide practical training in one or more modern languages.

The fourth main division which I have called civics, includes history, institutions, and current happenings. Much has been written, little done, toward the effective modernization of this work; so that though new views of historical values prevail in theory, the schools go on teaching the sort of history they have always taught and in pretty much the same way. "Should a student of the past," writes Professor Robinson of Columbia, "be asked what he regarded as the most original and far-reaching discovery of modern

times, he might reply with some assurance that it is our growing realization of the fundamental importance and absorbing interest of common men and common things."¹ Now the conventional treatment of history is political. Meanwhile, as Professor Robinson goes on to say, "It is clear that our interests are changing, and consequently the kind of questions that we ask the past to answer. Our most recent manuals venture to leave out some of the traditional facts least appropriate for an elementary review of the past and endeavor to bring their narrative into relation, here and there, with modern needs and demands. But I think that this process of eliminating the old and substituting the new might be carried much farther; that our best manuals are still crowded with facts that are not worth while bringing to the attention of our boys and girls and that they still omit in large measure those things that are best worth telling."² If this be true, as it appears to be, the realistic approach may make as much difference in history as in literature.

The subject of mathematics offers peculiar difficulty. Perhaps nowhere else is waste through failure so great. Moreover, even when a certain degree of success is attained, it happens often that it is quite unintelligent; children mechanically carry out certain operations in algebra, guided by arbitrary signs and models; or they learn memoriter a series of propositions in geometry. The hollowness of both performances—and most children do not accomplish even so much—is evident the moment a mathematical problem takes a slightly unfamiliar turn. The child's helplessness exhibits a striking lack of both mathematical knowledge and "mental discipline." It cannot be that this training through failure is really valuable. Finally, a point might even be made on the ground that algebra and geometry as traditionally taught are mainly deductive exercises, whereas practical living involves the constant interplay of observation, induction and deduction. The artificiality of conventional mathematics therefore raises a suspicion as to its value—even were the subjects mastered.

The truth is that the present position of both algebra and geometry is historical. Now, let us suppose the realistic standard applied—how much mathematics would be taught, when, and in

¹"The New History," (New York, 1913) p. 132.

²Ibid, p. 137.

what form? "Mental discipline" as a formal object is not a "realistic" argument, since, as has been already said, it is an unproved assumption. At any rate, it is for those who believe in it to demonstrate how much good it does most children to make a failure in algebra and geometry. Is the elaborate study of mathematical and spatial relations through algebra and geometry a valid undertaking for its own sake? If so, neither the disinclination of the child nor the difficulty of the achievement is a reason for abandoning it. Disinclination and difficulty in that case simply put a problem up to the teachers of the subject: it is for them to find ways of triumphing over both. If, however, this study does not serve a legitimate and genuine purpose, then the mathematical curriculum must undergo a radical reorganization for the purpose of treating algebra and geometry from the standpoint of the other subjects which they serve. They would be taught in such form, in such amounts and at such times as the other subjects required. Thus geometry would be decreased in amount by something like two-thirds or three-fourths¹ and the form of the remaining fourth would be considerably modified. It is interesting to observe that doubt as to the soundness and value of our mathematical instruction has recently become so serious a matter that the Association of Teachers of Mathematics in New England has suggested "a one-year course in elementary algebra and geometry of a concrete sort, designed so far as possible to test the pupil's qualifications for future mathematical study";² and Dr. Snedden has raised the question as to why girls in high schools or as candidates for college should be required to present algebra; he has also urged that a knowledge of algebra is of no importance to men following law, medicine, journalism, or theology.³ Professor Breslich of Chicago, has been attacking the same problem vigorously from a not unrelated point of view.⁴ Without considering any point settled, it is clear that a Modern School which wiped the slate of mathematics and

¹"All the facts of geometry that a skilled mechanic or an engineer would ever need could be taught in a few lessons. All the rest is either obvious or is commercially and technically useless."—D. E. Smith, "Teaching of Geometry," (New York, 1911) p. 7.

²Preliminary Report on Status of Mathematics in Secondary Schools, December, 1914, p. 11.

³Ibid, p. 4.

⁴First Year Mathematics, (Chicago, 1906.) Author's Preface.

then subsequently wrote upon it only what was found to serve the real needs of quantitative thought and action might evolve a curriculum in mathematics that we should not recognize.

For convenience sake, the four large fields of activity have been separately discussed. But it must be pointed out that the failure of the traditional school to make cross connections is an additional unreality. The traditional school teaches composition in the English classes; quantitative work, in the mathematics classes; history, literature, and so on each in its appropriate division. Efforts are indeed making to overcome this separateness but they have gone only a little way. The Modern School would from the first undertake the cultivation of contacts and cross-connections. Every exercise would be a spelling lesson; science, industry, and mathematics would be inseparable; science, industry, history, civics, literature, and geography would to some extent utilize the same material. These suggestions are in themselves not new and not wholly untried. What is lacking is a consistent, thorough-going, and fearless embodiment. For even the teachers who believe in modern education are so situated that either they cannot act, or they act under limitations that are fatal to effective effort.

In speaking of the course of study, I have dwelt wholly on content. Unquestionably, however, a curriculum, revolutionized in content, will be presented by methods altered to suit the spirit and aim of the instruction. For children will not be taught merely in order that they may know or be able to do certain things that they do not now know and cannot now do, but material will be presented to them in ways that promote their proper development and growth—individually and socially. For education is not only a matter of what people can do, but also of what they are.

In the preceding sketch, I have made no distinction between the sexes. It is just as important for a girl as it is for a boy to be interested in the phenomenal world, to know how to observe, to infer, and to reason, to understand industrial, social, and political developments, to read good books, and to finish school by the age of twenty. Differentiation at one point or another may be suggested by experience. In any event the Modern School, with its strongly realistic emphasis will undoubtedly not overlook woman's domestic rôle and family function.

WHAT THE CURRICULUM OMITTS

This necessarily brief and untechnical sketch will perhaps become more definite if I look at the curriculum from the standpoint of the omissions. Let us restate our guiding thesis: modern education will include nothing simply because tradition recommends it or because its inutility has not been conclusively established. It proceeds in precisely the opposite way: *it includes nothing for which an affirmative case cannot now be made out.* As has already been intimated, this method of approach would probably result in greatly reducing the time allowed to mathematics, and in decidedly changing the form of what is still retained. If, for example, only so much arithmetic is taught as people actually have occasion to use, the subject will shrink to modest proportions; and if this reduced amount is taught so as to serve real purposes, the teachers of science, industry, and domestic economy will do much of it incidentally. The same policy may be employed in dealing with algebra and geometry. What is taught, when it is taught, and how it is taught will in that event depend altogether on what is needed, when it is needed, and the form in which it is needed.

Precisely the same line of reasoning would be applied to English, history, and literature. For example: There has been a heated discussion for years on the subject of formal grammar, which has been defended, first, on the ground that it furnishes a valuable mental discipline; second, on the ground that it assists the correct use of language. It is passing strange how many ill-disciplined minds there are among those who have spent years being mentally disciplined now in this subject, now in that. The Modern School would not hesitate to take the risk to mental discipline involved in dropping the study of formal grammar. It would, tentatively, at least, also risk the consequences to correct speech involved in the same step. For such evidence as we possess points to the futility of formal grammar as an aid to correct speaking and writing. The study would be introduced later, only if a real need for it were felt—and only in such amounts and at such periods as this need clearly required.

In respect to history and literature, a Modern School would have the courage not to go through the form of teaching children useless historic facts just because previous generations of children have

learned and forgotten them; and also the courage not to read obsolete and uncongenial classics, simply because tradition has made this sort of acquaintance a kind of good form. We might thus produce a generation as ignorant of the name of the Licinian laws as we who have studied them are ignorant of their contents and significance; a generation that did not at school analyze Milton's "Lycidas" or Burke's speech as we did, who then and there vowed life-long hostility to both. But might there not be an offset if the generation in question really cared about the history and politics of, say, modern England or New York City, and read for sheer fun at one time or another and quite regardless of chronological order Homer, Chaucer, Shakespeare, Walter Scott, Stevenson, Kipling, and Masfield?

Neither Latin nor Greek would be contained in the curriculum of the Modern School—not, of course, because their literatures are less wonderful than they are reputed to be, but because their present position in the curriculum rests upon tradition and assumption. A positive case can be made out for neither. The literary argument fails, because stumbling and blundering through a few patches of Latin classics do not establish a contact with Latin literature. Nor does present-day teaching result in a practical mastery of Latin useful for other purposes. Mature students who studied Latin through the high school, and perhaps to some extent in college, find it difficult or impossible to understand a Latin document encountered in, say, a course in history. If practical mastery is desired, more Latin can be learned in enormously less time by postponing the study until the student needs the language or wants it. At that stage he can learn more Latin in a few months than he would have succeeded in acquiring through four or five years of reluctant effort in youth. Finally, the disciplinary argument fails, because mental discipline is not a real purpose; moreover, it would in any event constitute an argument against rather than for the study of Latin. I have quoted figures to show how egregiously we fail to teach Latin. These figures mean that instead of getting orderly training by solving difficulties in Latin translation or composition, pupils guess, fumble, receive surreptitious assistance or accept on faith the injunctions of teacher and grammar. The only discipline that most students could get from their

classical studies is a discipline in doing things as they should not be done.¹

EXTRA CURRICULAR ACTIVITIES

So far I have discussed the Modern School only from the standpoint of its course of study. It is time now to mention other implications of the realistic or genuine point of view. If children are to be taught and trained with an eye to the realities of life and existence, the accessible world is the laboratory to be used for that purpose. Let us imagine a Modern School located in New York City; consider for a moment its assets for educational purposes: the harbor, the Metropolitan Museum, the Public Library, the Natural History Museum, the Zoological Garden, the city government, the Weather Bureau, the transportation systems, lectures, concerts, plays, and so on. Other communities may have less, but all have much. As things now are, children living in this rich and tingling environment get for the most part precisely the same education that they would be getting in, let us say, Oshkosh or Keokuk. Again, the Modern School is as much interested in the child's body as in his mind. It would therefore provide play-facilities, sports, and gymnastics. A study of Gary² and of the country day schools, now springing up should tell us whether the Modern School should or should not seek to provide for the child's entire day. Some of this additional material, we already know pretty well how to organize and use; as for the rest, we shall have to find out.

It is evident that, while in some directions the Modern School would have a fairly clear path, in others it would have to feel its way, and in all its attitude would be distinctly tentative and experimental. To no small extent it would have to create apparatus and paraphernalia as it proceeds. Textbooks, for example, almost invariably conform to tradition; or innovate so slightly as to be, from our point of view, far from satisfactory. The Modern School would thus at the start be at a great disadvantage as compared with

¹I should perhaps deal with yet another argument—viz. that Latin aids in securing a vigorous or graceful use of the mother tongue. Like the arguments previously considered, this is unsubstantiated opinion; no evidence has ever been presented in proof.

²The General Education Board has just authorized a study of the Gary schools, the results of which will be published.

established schools that seek gradual improvement through readjustment. But it would have this advantage—that it could really try its experiments with a free hand.

ORGANIZATION OF THE MODERN SCHOOL

President Eliot's paper was called "Changes Needed in Secondary Education." But the habits and capacities needed in a reconstructed secondary school are those whose formation must be begun in the primary school. A modern secondary school cannot be built on a conventional elementary school. If the primary years are lost in the conventional school, the child's native freshness of interest in phenomena has to be recovered in youth—a difficult and uncertain task, which, even if successful, does not make up the loss to the child's fund of knowledge and experience. Nor can the child's singular facility in acquiring a speaking command of other languages be retrieved. The Modern School would therefore have to begin with a vestibule, an elementary "Vorschule," in which children would be started properly. The relation between elementary and secondary education would be a matter for experimental determination; for whatever may prove to be right, the present break is surely wrong. So, also, the relation of the Modern School to the American College would have to be worked out by experience.

POSSIBLE RESULTS

Would the proposed education educate? Many of the disagreeable features of education with which under existing circumstances children are compelled to wrestle would be eliminated. Would not the training substituted be soft—lacking in vigor, incapable of teaching the child to work against the grain? Again, is there not danger that a school constituted on the modern basis would be unsympathetic with ideals and hostile to spiritual activity?

Two questions are thus raised, (1) the question of discipline, moral and mental, (2) the question of interest or taste.

There is, I think, no harm to be apprehended on either score. The Modern School would "discipline the mind" in the only way in which the mind can be effectively disciplined—by energizing it through the doing of real tasks. The formal difficulties which the Modern School discards are educationally inferior to the

genuine difficulties involved in science, industry, literature and politics; for formal problems are not apt to evoke prolonged and resourceful effort. It is, indeed, absurd to invent formal difficulties for the professed purpose of discipline, when, within the limits of science, industry, literature, and politics, real problems abound. Method can be best acquired, and stands the best chance of being acquired, if real issues are presented. Are problems any the less problems because a boy attacks them with intelligence and zest? He does not attack them because they are easy, nor does he shrink from them because they are hard. He attacks them, if he has been wisely trained, because they challenge his powers. And in this attack he gets what the conventional school so generally fails to give—the energizing of his faculties, and a directive clue as to where he will find a congenial and effective object in life.

A word on the subject of what I have just called the “directive clue.” Our college graduates are in large numbers pathetically in the dark as to “what next.” Even the elective system has not enabled most of them to find themselves. The reason is clear. A formal education, devoted to “training the mind” and “culture” does little to connect capacity with opportunity or ambition. The more positive endowments, of course, assert themselves; but the more positive endowments are relatively scarce. In the absence of bent, social pressure determines a youth’s career in America less frequently than in more tightly organized societies. But an education that from the start makes a genuine appeal will disclose, develop and specialize interest. It will, in a word, furnish the individual with a clue.

In this connection it may be fairly asked whether, in the end, it will not turn out that the Modern School practically eschews compulsion. Not at all. But it distinguishes. First of all, the interests of childhood, spontaneous or readily excitable, are of great educational significance: interests in life, objects, adventure, fancy—these the Modern School proposes to utilize and to develop in their natural season. Next, the capacities of childhood—for the learning of languages, for example—of these the Modern School proposes to make timely use with a view to remote contingencies. So far there is little need to speak of compulsion. Compulsion will be employed, however, to accomplish anything that needs to be accomplished by compulsion, provided it can be accomplished

by compulsion. Children can and, if necessary, must be compelled to spell and to learn the multiplication table, and anything else that serves a chosen purpose, near or remote; but they cannot be compelled to care about the Faerie Queene, and sheer compulsion applied to that end is wasted. If children cannot through skilful teaching be brought to care about the Faerie Queene, compulsory reading of a book or two is as futile a performance as can be imagined. The Modern School will not therefore eschew compulsion; but compulsion will be employed with intelligence and discrimination.

As to the second question—whether the Modern School would not be spiritually unsympathetic, the answer depends on the relation of genuine interests of a varied character to spiritual activity. It is, of course, obvious that, if the Modern School were limited to industrial or commercial activities, with just so much language, mathematics and science as the effective prosecution of those activities requires, the higher potentialities of the child would remain undeveloped. But the Modern School proposes nothing of this kind. It undertakes a large and free handling of the phenomenal world, appealing in due course to the observational, the imaginative and the reasoning capacities of the child; and in precisely the same spirit and with equal emphasis, it will utilize art, literature and music. Keeping always within reach of the child's genuine response should indeed make for, not against the development of spiritual interests. Are science and such poetry as children can be brought to love more likely or less likely to stir the soul than formal grammar, algebra, or the literature selections that emanate from the people who supervise the college entrance examinations?

The education of the particular pupils who attend the Modern School might prove to be the least of the services rendered by the School. More important would perhaps be its influence in setting up positive as against dogmatic educational standards. We go on teaching this or that subject in this or that way for no better reason than that its ineffectiveness or harmfulness has not been established. Medicines were once generally and are still not infrequently prescribed on exactly the same basis. Modern teaching, like modern medicine, should be controlled by positive indications. The schools should teach Latin and algebra, if at all,

just as the intelligent physician prescribes quinine, because it serves a purpose that he knows and can state. Nor will tact and insight and enthusiasm cease to be efficient virtues, simply because curriculum and teaching method are constant objects of scientific scrutiny.

In education, as in other realms, the inquiring spirit will be the productive spirit. There is an important though not very extensive body of educational literature of philosophical and inspirational character; but there is little of scientific quality. The scientific spirit is just beginning to creep into elementary and secondary schools; and progress is slow, because the conditions are unfavorable. The Modern School should be a laboratory from which would issue scientific studies of all kinds of educational problems—a laboratory, first of all, which would test and evaluate critically the fundamental propositions on which it is itself based, and the results as they are obtained.

The inauguration of the experiment discussed in this paper would be at first seriously hampered because of the lack of school paraphernalia adapted to its spirit and purposes. Textbooks, apparatus and methods would have to be worked out—contrived, tentatively employed, remodelled, tried elsewhere, and so on. In the end the implements thus fashioned would be an important factor in assisting the reorganization and reconstruction of other schools—schools that could adopt a demonstration, even though they could not have made the original experiment.

Finally, the Modern School, seeking not only to train a particular group of children, but to influence educational practice, can be a seminary for the training of teachers, first, its own, then others who will go out into service. The difficulty of recruiting a satisfactory staff to begin with must not be overlooked; for available teachers have been brought up and have taught on traditional lines. On the other hand, the spirit of revolt is rife; and teachers can be found whose efforts have already passed beyond conventional limits. With these the new enterprise would be started.

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