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THE MOTIVATION OF SCHOOL WORK

BY

H. B. WILSON

SUPERINTENDENT OF SCHOOLS, BERKELEY, CALIFORNIA

AND

G. M. WILSON

PROFESSOR OF VOCATIONAL EDUCATION AND DIRECTOR OF THE SUMMER SESSION, IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, AMES, IOWA

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PREFACE

Two forces have combined in stimulating the preparation of this volume. One force is personal, the experience of the authors; the other is general, the growth of an educational theory demanding motive and interest in all school work. In the twenty or more years of their experience in rural, grade, and high schools, both as teachers and superintendents, the authors came to see clearly the large gains in the speed, thoroughness, and scope of the work when pupils were trying to do things of personal concern to them. From these experiences, they gradually accumulated a large body of concrete results secured under perfectly normal schoolroom conditions. Through presentation of these data to teachers and superintendents in educational meetings, in college and normal school classes, and through educational magazines, a demand arose for a more complete and organic statement of how to motivate the pupil's mastery of the various school subjects and of the results which have been secured from such motivated work.

The fundamental theory of motivation is not new. Glimpses of this theory appear here and there throughout the history of education. Rousseau, half consciously, was one of its first popular exponents. In recent years, Dr. John Dewey has given it clear statement and a large following. But teachers find difficulty in carrying theory into practice even when clearly understood and appreciated. Teachers and superintendents, alike, have been seeking help in putting the theory of interest and motivation into practice under schoolroom

conditions. A demand for a collection of the best practices of the best schools has grown increasingly insistent.

The present volume, therefore, seeks to satisfy personal obligations and a growing professional need. It recognizes that the largest daily task of the teacher is the detailed planning and preparation of the various lessons to be taught. The most difficult phase of teaching is not acquiring the necessary information nor controlling the class, but it is discovering problems and motives for the work that will make it appeal to and interest the pupils. This book is designed to furnish concrete help of a fundamental kind in solving this daily problem of every teacher.

While giving some attention in Part I to a clear and comprehensive statement of the theory of motivation, the main body of the work is devoted to concrete illustrations of the practical working of the theory in teaching the subjects of the common school curriculum in the classroom. The general plan of the book is easily comprehended from the table of contents.

While a more complete and thorough grasp of the technique of motivation may be secured from a careful study of the entire volume, it is organized in such a way that each chapter dealing with one of the school subjects may be readily understood and used without reference to the other chapters. Any teacher whose time does not enable her to read the entire volume will find it easy to get the spirit and purpose of the authors and to secure the help she wants by reading chapter II and then turning to the chapter treating the subject in which she needs special help.

The indebtedness of the authors, particularly to their associates in public-school work during the last decade,

is so great that individual acknowledgment here would require the printing of a long list of names. Where possible, credit for illustrations used has been given in the body of the text. Due acknowledgment is likewise made to those leaders in education to whom the authors are heavily indebted not only for guiding principles, but also for inspiration.

The authors acknowledge gratefully the courtesy of *School and Home Education*, *American Education*, *The Elementary School Teacher*, *The Midland Schools*, *The Educator-Journal*, and the *Atlantic Educational Journal* for permission to use freely portions of certain chapters previously published in these educational magazines.

Among those to whom the authors are deeply indebted for helpful constructive criticism of certain portions of the manuscript in the various stages of its formulation are Miss Frances Jenkins, Mr. George A. Brown, President John R. Kirk, Assistant Superintendent K. J. Hoke, Professors T. W. Galloway, J. W. Searson, J. Fleming Hosic, C. R. Mann, L. D. Coffman, Thomas H. Briggs, George D. Strayer, W. C. Bagley, and E. L. Thorndike.

PREFACE TO THE REVISED EDITION

The main feature of the revision is the addition of the chapter on the project method. The project method of teaching is a direct outgrowth of the general acceptance of the doctrine of interest and the principles of motivation. There has been much confusion in the use of the terms "project" and "project-method." The added chapter on the Project Method will make clear the proper application of these terms and will

show the fundamental relationships of the project method and motivation.

The book as originally written has furnished such a satisfactory working guide for motivated teaching, and has been so stimulating in leading teachers in all parts of the country to work out and report motivated types of school work, that it seems best to leave the original chapters practically unchanged for this revision.

Motivated teaching has gained in favor rapidly because it is based squarely upon the doctrines of interest and self-activity, and it recognizes that the child engaged in purposeful activity of a worthwhile nature furnishes the ideal condition for learning and instilling right habits and right ideals. The proper motivation of school work not only means increased efficiency in teaching, but it means for the child richer experience, larger personality, and new joy in living.

THE AUTHORS

September 1, 1920

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CHAPTER I

THE PRESENT NEED IN EDUCATION

NOTWITHSTANDING all the advances in public education in recent years, negative criticism of the work of the public schools constantly confronts us. Much of it is sensational and groundless, but some of it is undoubtedly temperate and well founded. Educators must frankly concede that in spite of all the improvements which have been made in the public schools in recent years, the work and activities of the school system are not sufficiently significant to the pupils to possess the impelling, absorbing power that should characterize preparation for a life-work. Before discussing the improvements needed, a brief consideration of the evolution of the school and of the social progress it has made possible will afford a clearer perspective, in view of which present conditions and pressing needs may be more adequately stated.

The present attainment and the next step. Despite the general demand for the improvement of the public schools, the cause of education was never in a more encouraging condition than to-day. In every respect, the schools are better to-day than ever before. They enroll more children and hold them longer. They do more work and do it on a higher plane. The teachers are better trained and better paid. The schools have a

broader outlook and do more real service in the community. The schools were never more skillfully managed, or more powerful. The introduction of the American school into the Orient has broken up forty centuries of conservatism. It has given us a new China, a new Japan, and is working marked progress in Turkey and the Philippines. The schools not only encourage social solidarity and progress, but they are in position to determine the lines of progress. Have they reached the limits of their power, or are they just approaching an era of expansion into greater power and usefulness? What is their present attainment and what should be the next step forward?

The ancient conception was not that of an educated people, but merely of an educated class. In ancient Egypt it is doubtful if as many as one per cent of the people were educated. Learning was an ornament for the few. The same was true in Greece, that ancient center of culture and learning. It was education for the few, probably not exceeding ten per cent of the total population. The masses were left in ignorance and slavery. The Greek culture was a culture for ornament and for leisure. Early Roman education aimed at the practical, — commerce, war, and the forum. But education was a private enterprise and was confined almost exclusively to the boys. Later it was limited to the rich and the ruling classes. Slavery and ignorance were the common lot.

The Christian era gave us a new conception of the value of the individual, woman included, but the ideal was not realized during the Middle Ages. The mediæval practice was to educate only the exceptionally bright boys. Theology and discussion were the end, authority and the syllogism were the chief means. Latin was the

language of learning, the vernacular being considered common and vulgar. No practical ends were sought in education. It is doubtful if the percentage of educated people was any greater in mediæval than in ancient times. Certainly learning did not attain to such heights.

Modern ideals require that all shall be educated, and that such education shall be serviceable to the individual culturally, socially, and practically. These ideals have been slow in evolving and are probably not fully realized anywhere to-day. Rousseau did valiant service in directing our attention to the child and in helping to make the child — his interests and needs — the center of the educative process. He was supported in turn by Pestalozzi, Froebel, and other reformers. But the ideal is still far from general realization. The general influence of Luther and the Reformation was toward universal education in the vernacular. It was not long until compulsory education was tried out. To-day compulsory education is the rule in civilized nations, and the vernacular is thoroughly established in the schools. We scarcely realize that for a thousand years it was otherwise and that the new régime is hardly a century old.

But our difficulties and responsibilities have increased almost in proportion to the numbers being educated. As long as we sought to educate only the few, — the wealthy and the precocious, — we did not need to be very critical of either our subject-matter or our method. But when we compel the attendance of the laborer's son, and when by taxation we take from the widow's income, then all phases of our school work are immediately brought under scrutiny, and very properly so. The taxpaying public has a right to demand that the subject-matter selected for school work shall be suffi-

ciently valuable to justify the parents' expenditure of money and the children's expenditure of time; that schoolroom methods shall be effective and economical; and that teachers shall be properly trained for their work.

The old school and the new. The extent of the improvement in all of these lines within recent years can best be appreciated by contrasting the schools of yesterday and of to-day in a typical Middle-Western State. In a particular township fifty years ago there were seven log schoolhouses. The schools opened after Thanksgiving and continued for three or four months. The subjects taught were spelling, reading, writing, and arithmetic, the greater part of the time being devoted to spelling and arithmetic. Girls seldom studied arithmetic. The pupils ranged in age up to twenty-one or twenty-two years. There was no classification by years or grades, no uniform texts, and no compulsory attendance. Each pupil moved forward at his own rate, or stood still. The teachers were men who had been examined by the local school directors, and had demonstrated their ability to spell, to write, to read in McGuffy's Sixth Reader, and to cipher to the Rule of Three. Most of these men were transients in the community and in the profession. They merely stayed for the winter, and would later pass on to more permanent and more remunerative employment, or would use the money received to buy government land. Seldom did a year pass, however, that some one of these teachers was not "whipped out" by the big boys and compelled to give up the school without finishing the term.

To-day in that same township there is one central school plant which is surrounded by ten acres of ground devoted to lawn, playgrounds, gardens, and agricultural experiments. Most of the children are transported in

school wagons. The others receive pay for transporting themselves and are provided with a commodious barn for their horses and vehicles. The schoolhouse is modern in every particular, properly heated, lighted, and ventilated, equipped with indoor toilets, basement play-rooms, manual-training shops, domestic science kitchens, gymnasium, and a spacious assembly-room. The school is thoroughly graded, and offers four years of high-school work. The program of studies is modern and diversified. In comparison with an eighteen- or twenty-year-old pupil of the old school, a twelve-year-old boy of to-day not only knows more arithmetic, reads better, writes better, spells better, but he also knows far more history, physiology (sanitation and hygiene), geography, and language, and he has had work in music, drawing, manual training, and agriculture. Furthermore, this modern boy's attitude is good. He admires his teacher and his principal, he coöperates with the other children, and he is interested in the community and in affairs. He will make a better citizen and a more intelligent voter.

The principal of this school is a graduate of the state normal school and of the state agricultural college. He is in sympathy with country life and is the inspiration of the entire community. He has made the school a community center, and the high school a center for agricultural extension work among the farmers of the township. He was employed for this position three years ago at a salary of twelve hundred dollars for twelve months. His salary has been increased each year since. He is now married and lives across the road from the school plant. He has coöperated with the trustee and county superintendent in the selection of the teachers. All of these are at least high-school graduates with a

year of professional training. The assistants in the high school are college graduates with professional training. One of the grade teachers is a graduate of the state normal school. The janitor is employed by the year and lives on the school grounds in the house that was formerly a one-room school-building.

This picture is not overdrawn. It can be duplicated to-day not alone in Massachusetts, Indiana, and California, but also in Louisiana, in North Carolina, in Kentucky, in Ohio, in Iowa, in the Dakotas, in Idaho — in short, in almost every State of the Union. The progress in town and city systems has been equally marked.

It is safe to say that the last one hundred years have seen more progress in the schools than did the preceding one thousand years. Furthermore, the last generation has seen more progress than did the preceding ten generations. Under these circumstances the times are auspicious for a general advance. If the ideals that have been realized in our schools in a few places could be realized universally, if the rank and file could be fired with the zeal and inspired with the vision of our leaders, and if the best practices of the select few could be made to prevail throughout our schools, the level of efficiency would be raised immeasurably. And that advance will be made. The American people will not be permanently content with untrained teachers in most of their schools, with organization which is expensive and inadequate, and with subject-matter which fails to serve the interests of developing childhood.

The divine discontent. Nor will the school people themselves be satisfied; indeed, they dare not be. The schools to-day have keener competition than ever before. Formerly almost the only intellectual competitors

of the schools were dry Sunday sermons and the weekly party paper. Now the schools must compete successfully, not alone with improved intellectual agencies, but with every other outside means of culture or amusement — with the socialized church, the cosmopolitan daily and its Sunday supplement, the moving-picture shows, the Boy Scouts and Camp-Fire Girls, the modern library, the Young Men's and Young Women's Christian Associations, and the dance hall. True, the school should utilize these forces and coöperate with them; but it must also compete with them. It must show improvement in comparison. It must make an appeal which is sufficiently interesting and worth while to hold the children in school. And all of this means that the times demand better teaching, a better selection of subject-matter, and better methods of working. The rank and file of the teaching profession must advance to the higher levels.

To promote this advance, teachers should have available for their use the helpful material growing out of the best practices of our best teachers in our best schools. We know that it is possible to meet the demands of childhood, and to keep the children in school better, because it is being done in many places. The progressive teacher wants to know of the better practices which secure these results, which secure the coöperation of parents, and which secure a larger income in school taxes without dissent or murmur. It is found that these better practices also develop childhood, nurture individuality, and encourage desirable variation and initiative. They tend to abolish the treadmill of education. They make the educative process more effective and economical, doing for teaching what Emerson and Taylor, as efficiency engineers, have done for business.

In fact, it is the development of the individual workman through motive and interest which constitutes the basis of the success of Emerson and Taylor. Why not secure interest and more effective effort in school work through a thorough motivation of all the pupil's work by giving him an opportunity to expend his energies upon problems and situations that to him are real and worth while? Why not substitute for the formal text-book routine of schoolroom practice, self-imposed tasks which the pupil is vitally interested in successfully completing?

The fundamental difficulty. The fundamental difficulty is that the work in which the schools seek to engage the child is not significant to him. It does not satisfy the needs which the individual child experiences. It does not gratify any hunger or yearning he has felt. It does not answer any questions which his experiences have raised in his mind. It does not contribute to the solution of any problems which he has encountered in actual life. With the work thus external and foreign to the child's personal hungers, longings, questions, experiences, and problems, it does not render him aggressively self-active. In the average school, we find him listlessly sitting, looking, listening, and answering when questioned, rather than initiating, doing, and creating. Yet we know definitely that growth and mastery can come to the child only as a result of vigorous, aggressive self-activity.

It is not necessary to arouse controversy by emphasizing a particular aim in education. The aim of education may be variously stated to include knowledge and character and to lead to efficiency in citizenship. But however satisfactorily the aim of education may be stated, we are forced to admit that such statement in itself has rendered very small service, for an aim may

be two centuries in realizing itself in actual school practice. The crying need to-day is for educational leaders among practical school people who can make ideals operative, who can work educational aims into the course of study and the practices of the schoolroom. We need to realize aims in content and method as well as in abstract statement. From whatever source we draw our inspiration and whatever the avowed quality of our subject-matter, — humanistic, disciplinistic, materialistic, scientific, socialistic, or an eclectic combination of these, — the questions of content and of method are almost equally pertinent. And above content and method as final determiner of correct school practice, stands the child with his attitude, his interests, his motives and problems.

While the schools have made remarkable progress and are continuing to make progress, there is strong evidence that there is much room for improvement. In the United States as a whole, of one hundred pupils entering the first grade, only ninety enter the fourth grade, seventy-two remain in the sixth grade, and forty-three enter the eighth grade. Thirty-six pupils out of the one hundred reach the high school, but half of these never reach the second year and only twelve remain to graduate from the fourth year of high school.[1] That we graduate only twelve per cent of our pupils from the high school is a very severe indictment. The indictment becomes more severe when we are convinced by careful studies that this dropping out of school is not due to the poverty of parents, but that most of it may be charged up to the inefficiency of the schools.[2]

[1] Strayer, Bulletin no. 5 of the U.S. Department of Education (1911).

[2] St. Louis, *Report* of the Board of Education (1911).

The St. Louis study shows that eighty per cent of the children leav-

While a larger percentage of pupils enter the upper grades and secondary schools in America than in Europe, yet there are special, private, vocational, trade, evening, and continuation schools in a large part of Europe that give their total figures a very different aspect.

The remedy. The remedy for this situation, — the means of bringing our school work to a higher level, — as developed in the following pages, is the thorough motivation of the child's school efforts. What this means concretely and in detail is developed in chapters II and IV, and the following chapters show its application to particular subjects or to particular lines of school work.

Any thorough effort to motivate the school's work will result in the elimination of useless [1] subject-matter from the traditional course of study. Educational leaders are convinced that the greater part of formal grammar fails to function and should be eliminated from the grade work.[2] In arithmetic fully one half of our energy has been expended upon useless and obsolete subject-matter. In spelling we have been hopelessly burdening the child in our attempt to teach from 10,000 to 15,000 words, while the outside limit of an eighth-grade writing vocabulary is less than 5000 words.[3] And so in geography, in physiology, in history, in writing,

ing the high schools before graduation are not forced out by poverty. The school simply fails to hold them. See also the *Report* of the Massachusetts Commission (1905), p. 104; the *Report* of the Superintendent of Schools of New York City (July, 1909); the *Report on Vocational Training*, issued by the City Club of Chicago, p. 34.

[1] See *Year-Book* of the National Society for the Study of Education, vol. 14, part 1.

[2] F. S. Hoyt, "Studies in English Grammar," *Teachers College Record* (September, 1905).

[3] W. F. Jones, *The Concrete Materials of English Spelling;* L. P. Ayres, *Spelling Vocabularies of Personal and Business Letters;* B. R. Buckingham, *Spelling Ability.*

in algebra, physics, and other subjects, — the work has been organized from the standpoint of scientific adult subject-matter, with the result that the child has been crushed, discouraged, and driven out of school. Although the main purpose of the following chapters is to show how to motivate significant and vital subjects for the pupil, the omission of useless subject-matter necessarily receives treatment in showing how to motivate the work pupils should do.

A further remedy for the situation, which is not treated herein, but which we cannot forbear mentioning, has to do with the organization, management, and supervision of the schools. It has been estimated that the loss due to the useless repetition of grades by pupils in our schools amounts to $27,000,000 annually in the United States. This is the money loss alone, and may not be the greatest loss. It is due to a situation which our supervisory officers could and should remedy. Annual promotion should give way to semiannual or quarterly promotion, thus reducing the loss in case of repetition. But failure and repetition should be reduced to the minimum through the employment of special teachers to assist the backward, through personal attention to the backward by the regular teacher, and through a separation of pupils [1] according to ability so that an entire room may move at the same rate; thus making failure unnecessary, and slower but regular progress the rule. On the other hand, the promotion scheme should be sufficiently flexible to permit the more rapid promotion of the bright pupils. They are partic-

[1] See *Provision for Exceptional Children in the Public Schools*, U.S. Bureau of Education, Bulletin no. 14 (1911). See also *Reports* of the National Education Association (1908), p. 147; (1910), p. 155; (1912), p. 355; and Keyes's *Progress of Children through the Grades*, Teachers College Publications.

ularly susceptible to disgust with formal treadmill work. They are an unusual asset, and they must be conserved to the school and society.

With our school work thoroughly motivated, with the useless and obsolete eliminated, and with a school organization modified to meet the demands of childhood, we may reasonably expect that our schools will gradually move toward greater efficiency, toward a higher level of teaching and toward results commensurate with the improvement in method and the better selection of subject-matter.

CHAPTER II

THE MEANING OF MOTIVATION

The motive and the goal. That attack upon school work which seeks to make its tasks significant and purposeful to each child, by relating them to his childish experiences, questions, problems, and desires, is called *motivation*. The child's work is motivated whenever he sees a real use in it — whenever it satisfies some need he feels, provides some value he wants, supplies some control he wishes to possess, secures some desired end, or helps him to attain any definite goal.

The goal sought may be near or remote — as near as earning a penny to buy a stick of candy, as far as gaining the mental and manual ability to construct an airship. So long as the child comprehends more or less clearly the relationship between the work he is doing and the end sought, his work is motivated. The more definitely he appreciates this relationship, and the more keenly he desires to reach the given goal, the more impelling are his motives for working.

How school work moves forward when real needs arise may be shown by recounting an actual school experience: —

The educational value of a May-Day party. A great many very interesting real problems grew out of the decision of a third-grade class to give a May-Day party to which their mothers were to be invited. Under the skillful management of the teacher,[1] the children carried the

[1] Mrs. Etna Stivers Dwyer, St. Louis, Mo.

responsibility for the party from its inception to its completion. They wished to earn the money necessary to defray all expenses and to manage the development of the program, the reception of the guests, the presentation of the entertainment, and the serving of the refreshments.

During the progress of the work, and following it, the teacher based much of her school work upon the problems the children found it necessary to solve. Problems solved during the manual training and art lessons grew out of the need for a May basket and a program for each guest. Many problems in arithmetic arose in estimating the cost of the party and in figuring up the purchases made. These were met and solved in the arithmetic lesson. The following, selected from the teacher's list as reported to her superintendent, are typical: —

1. There are 50 pupils in our room. If each pupil comes and each pupil's mother comes, how many will be at our party? How many will it make if we also invite the 4 supervisors who teach us?
2. Eight mothers replied to our invitation that they cannot come; how many should we expect at our party then?
3. How much ice-cream must we get to serve 96 guests? If a pint of ice-cream will serve 4 persons, 1 quart will serve —— persons. One gallon then will serve —— persons. It will, therefore, take —— gallons to serve 96 persons.
4. One gallon of ice-cream costs 80 cents, so 3 gallons will cost us $——.
5. If we serve each person 2 nabiscoes, we will need —— nabiscoes.
6. There are 50 pupils in our room. If each child earns a nickel, we will have $——.
7. Our teacher gave us 50 cents she made. Our $2.50 and her 50 cents will give us $—— to spend for refreshments.
8. Our ice-cream will cost us $2.40, so we will have —— cents left to buy nabiscoes.

Many additional problems were met in determining the number of programs, dishes, spoons, napkins, and chairs which would be needed for the party. Many of the problems were different from those the pupils had had in the arithmetic in use. Many original ways of solving the problems were therefore developed.

Interesting compositions were written in which each told how he earned his money and in which the success of the party was reported. Notes were written asking the first grade to make colored-paper chains with which to decorate the room, another grade to make programs for distribution to the guests, and other grades for flowers to decorate the room and for chairs to seat the guests. Finally a formal invitation was written to each guest invited. After the party was over, all who assisted were thanked in a written note or in a personal message borne by some pupil. A gentleman who contributed some paper napkins received a very courteous and detailed note of thanks.

The following are specimens, chosen from a large number reported, which illustrate the kind of writing the children did. The occasion for each bit of writing is evident from the preceding explanation: —

The Way I Earned My Nickel

I earned my nickel by not crying for five days, but I could hardly keep from it.

How I Earned My Nickel

I said to mamma, "I want to earn a nickel." She said, "If you will wash the dishes this noon, I will give you a nickel." So I went right to work and did them. She gave me my nickel.

Dear Miss F.: —

Would your children please help us make the programs for our May party? We have the paper down in our room. We will be glad to bring it up if you can help us.

Yours truly.

Dear Miss F.: —

We thank you and your children very much for the programs that you made for us. They are very nice and we appreciate them.

Yours truly.

Dear Miss F.: —

We kindly ask you if one of your 4A pupils will please show one of us how to make a raffia mat. We will need one for a prize at our May-party.

Yours truly.

Dear Miss C. and children: —

We thank you very much for the chains. They decorated the room and made it look pretty. We appreciated them very much.

Yours truly.

Dear Mr. L.: —

We are very, very much pleased with the napkins you gave us. It will save us from buying them now. The flowers around them are so pretty.

Yours truly.

Miss Stivers' pupils
request the pleasure of
Mrs. W. E. Adams'
company at their May party
on Tuesday, May third,
at three o'clock.

The largest problem was developing the program rendered at the party. This called for singing and added to the interest in the music lessons. It also called for a little play and led the children to dramatize one of their Greek history stories. The program rendered was as follows: —

PROGRAM

Song — *The Merry Month of May*
Song — *May Song*
Words of Greeting.....Thelma Long
Song — *Queen of the May*
How we earned the money for our party
Each of four children read his story
Song — *The Holiday*
Story-Telling —
The Wind and the Sun.....Jack Brown
Three Wishes.....Lucy Walters
The Wise King and the Bee.....Will Lee
The Frog Who Tried to Make Himself Large.Rosa Karns
Dramatization — *The Story of Hermes*
Song — *The May Pole Dance*

Refreshments

When the party was over and all the courtesies due had been attended to, teacher and pupils alike felt that they had not only enjoyed having the little social, but that they had had an infinitely more valuable series of lessons in music, drawing, writing, language, and arithmetic than they could have gained in the same time merely through the faithful use of their textbooks in the usual way. They really felt that they had actually used them more, although in every case it had been to get help in solving some problem met in planning for the party. Every child was eager to have each thing exactly correct, and so he gladly used any book or got any lesson that would help in completing the plans for the social.

Motivated language work. The teaching of language work through motivation was determined upon by a certain sixth-grade teacher who had secured some very satisfactory results through isolated attempts to motivate her pupils' work. Through one entire semester,

she taught all of the language assigned to her grade upon the basis of specific motives operating in the lives of her pupils.

Her purpose as a teacher, of course, was to produce a certain growth in language power in her pupils. She decided to do this on the basis of actual needs for this power felt by the children. In other words, she had her pupils meet real situations as they arose, and led them to undertake certain enterprises which required the use of language power to accomplish the ends attempted.

At the close of the year an analysis of her work showed (1) that every technical aspect of the work assigned her by the course of study had been covered, and (2) that much other material not assigned to this grade in the course of study or the pages of the language text had been either reviewed or freshly studied because a genuine need for it had arisen in the course of the work.

This enriched program of study is almost inevitable when the problems undertaken appear to the pupils to be real problems in life. They will work like little Trojans to solve the difficulties which confront them.[1]

The incentive and the motive. Such a method of attack as that given in the preceding incidents supplies incentives for work; but it does not stop merely with incentives. Incentives are external to the results produced by one's efforts. The fond parent who gives his child a dollar for each E grade shown on his monthly report card, supplies the child with an incentive. But the father who says, " When you have learned enough arithmetic and manual training to help me build a boat for us to sail in, let me know," has supplied the boy

[1] The detailed procedure used in motivating language work, together with the results attained, is set forth fully in chapter VI.

with a motive for his hours in the school shop and over the intricacies of board measure. Motivation goes beyond incentive, supplying larger, more worthy, and less selfish ends for attainment, with the result that the lesser incentive is sunk in the accomplishment of the larger end. This is shown clearly in the incident of the children who gave the May-Day party.

In other words, whereas incentives are superficial and external in relation to one's efforts, motives are fundamental and vital in determining effort. The incentive is proposed to the child to stimulate him, while the motive arises out of his own efforts in self-expression and self-realization. Any motive operates as an incentive, but no mere incentive constitutes a genuine motive.

Interest and motive. This same method of attack also insures the interest of children in their school work, for a motive to work is larger than an interest in work. The children were intensely interested in all they did to give the May-Day party; but their interest was only a part of a larger thing, their motive in it all, which stimulated them far beyond what mere interest could do.

When one is interested, he responds appreciatively to an object or a situation; but his reaction may carry him no further. This is necessarily true, since one's interests in any environment are many. For example, as I go through town every morning to my office, I find that many things arrest my attention and interest me. As I pass a large real-estate office, I may note a property with which I am familiar advertised for sale at "a low figure." I am apt to observe the attractive windows of a men's furnishing store and to find myself especially interested in a suit of clothing, pleasing in

pattern and style, and right in price. I am almost certain to devote some time to the bookstore window if a variety of new books is on display, particularly if one of them is a new book on education from a recognized leader in the educational world.

Each of my responses is a manifestation of interest. Yet, if I do not purchase the land, the suit, or the book, my interest reaction is insufficient to accomplish the end desired by the advertiser. The same thing is true in school work. If the pupil's response to any stimulus ceases with mere interest, even though it be intense, it is evident that little progress will be made in the realization of the end.

Motive, therefore, goes beyond interest. Rowe[1] says: "While . . . interests . . . are like railroad ticket forms, all printed and ready for the agent to stamp, the motive is like the ticket which has been stamped, that is validated, and is good until used, unless recalled."

Our interests incline us more or less strongly to do many things, but action in the way of realizing them will not occur until we have stamped one or more of them as being good for us. The moment I stamp my interest in the educational book I saw in the bookshop window, — the moment that I decide it will help me in my work to possess it, — acquiring it becomes my goal for realization. Interest may hold my attention actively upon a desired end, but motive renders me aggressive in securing it for myself. I go into the shop and buy the book.

While there can be no motive without interest, all interests do not result in motives — for example, while I buy the book, I do not buy the land.

To summarize: In the light of the foregoing discus-

[1] *Habit Formation*, p. 147.

sion, it is clear that motivation is accomplished whenever the student sees sufficient reason for the work he is doing, and appreciates its value to him personally, and whenever his effort is directed toward the accomplishment of some longed-for end, near or remote. As soon as a student definitely accepts and pursues an ideal, it becomes a motive in his life which determines all of the efforts he puts forth in seeking to realize it.

Motivated work, therefore, is definitely purposive in a student's life. It contributes to the realization of his present aims. Of course, in the pursuit of an end requiring extended effort, the motive will hardly be sufficient to keep one at the white heat of enthusiasm throughout. At times one's effort will run so low that it seems in danger of "fagging out" entirely. The fact that it does not demonstrates the imperious force of a genuine motive.

The school as an institution of society must be motivated. It must recognize that its function in the social structure is to produce moral and intelligent citizens. But that broad motive is too large to be readily visible. Children are incapable of recognizing its value. They cannot see the connection between learning long division and being president of the steel works. They would much prefer to go chestnutting. Therefore, it is in the teaching process that the need of motivation becomes most manifest and that its contribution in producing the larger result becomes most definitely evident.

The ideal way of taking up the study of any new subject is to meet a problem or need which may be solved or satisfied by its mastery. The type of attack and the form of recitation will naturally vary, but this funda-

mental feeling of need for the thing pursued should always be present. In speaking of drill work, Strayer rightly says: [1]—

> Ideally, drill lessons should come when the children see that their future progress is conditioned by successful formation of the habits involved.

He further adds:—

> A motive must be provided for the work. The stronger this incentive, the greater will be the attention given to the work in hand and the sooner will the desired results be secured. Very much of the drill work which is done is well-nigh futile because it is imposed upon children. They do not see its significance, and feel little interest in the accomplishment of the results demanded.

In discussing the same type of lesson, Bagley [2] likewise urges that "practice should so far as possible be effectively motivated," that the student may have "a strong incentive for making perfect responses." What is true of the need of motivating the drill lesson is true of all types of lessons so far as we are able to determine from testing it in practice.

In speaking of the results to be secured to the student from the study of physics, Professor Mann shows [3] clearly that "the problem of securing the best discipline is the problem of securing the best motivation for the work." Again, in urging the importance of motivating the laboratory work in science, Professor Mann says: [4]—

> No scientist ever goes about gathering data unless he thinks they will be useful to him in accomplishing something he really

[1] *Brief Course in the Teaching Process*, p. 42.
[2] *Educational Values*, p. 19. [3] *The Teaching of Physics*, p. 195.
[4] *Ibid.*, p. 132.

wants to do. It is this desire, this longing to find out on his part that furnishes the motive that keeps him at work. Is it reasonable to imagine the children will become scientific thinkers if we simply put them through the motions called for by the steps in the formula unless we also inspire them with motives similar to those of real scientists doing real investigation?

The technique of motivated teaching. It is evident that the largest problem in the technique of teaching consists in supplying in the initial attack and throughout the mastery of the work in hand adequate motives for the efforts of children. As teachers come to understand the technique of this method of teaching, they will work from the standpoint of motivation just to the extent that they think of their work as a series of problems and forget the course-of-study limits as expressed in the number of pages of grammar or arithmetic that must be completed in such-and-such a term. They will become conscious of their pupils as social beings, working and strengthening their growth and development in perfectly normal ways. They will think seriously and plan more carefully in terms of child growth and development. Teachers must see that the environment which affords children the experiences they crave likewise affords the basis for the formal efforts of the school in educating its pupils.

Doubtless it has occurred to the reader that the problem of motivation is no more one of finding motives that will impel the children to obtain larger results in their work than it is of cultivating in them a feeling for and a disposition to choose worthy, lofty, uplifting motives. This is most effectively done, however, by so organizing our work and methods of procedure that the pupil's energy is always entirely consumed in his effort to realize some worthy end which is significant to him.

As he develops, these ends will become more and more worthy. Under the guidance of teachers he will become desirous and capable of choosing the less selfish and more remote ends, and thus his moral standards will be elevated and desirable progress in his complete socialization will be made.

Teachers must frankly recognize, of course, that with our present knowledge we do not see how to supply desirable and adequate motives for all of the work it seems wise to ask the children to do. Until we do, we must go right on imposing work, and rendering it interesting through the methods of presentation employed. We should continue to work faithfully, however, feeling that we are weak until this gap is almost, if not entirely, filled. Let us have the courage gradually to omit such work as seems meaningless to the children. There is more significant work already than there is time in which to do it.

Let us remember, also, that time will be required to develop a technique of working from the standpoint of motivation which will seem as satisfactory as the technique it must supplant. The establishment of a new technique requires battling against the prejudices of the "old school" and against the persistence of the habits of thought and action established by it. Progress is certain in both matter and method if we move conservatively and wisely.

Within the compass of a single volume it is impossible to discuss ways of motivating the entire scope of each subject in the course of study; and furthermore it is unnecessary. The aim is rather to present clearly how such an attack is made with children and then to illustrate how typical phases of certain subjects of study may be motivated and how the school's standards

and requirements in matters of conduct, discipline, and control may be made to appeal to children. Not only will the attack be indicated in the typical situations chosen, but illustrations of the results secured will be presented.

CHAPTER III

THE PSYCHOLOGICAL BASIS OF MOTIVATION

Child or subject-matter? Psychology has contributed to change and progress in the schools through emphasis upon the importance of the child, his mental processes, and his development.

What the schools need, and what is proposed through motivation, is a change in the inner spirit of the school, a change that shall recognize the child as the center of the school's efforts, giving to subject-matter a secondary place. In fact the elementary schools need complete emancipation from the servitude of scientifically organized subject-matter. In the elementary schools, administrator, teacher, course of study, and the inner spirit of the school must become subservient to the child, his interests, and the problems that to him are vital.

Modern psychology strongly supports the view that the child should be vitally interested in his work, if the largest results are to be secured. Proper interest will greatly accelerate his progress. Space will not permit an exhaustive treatment of the close relationship existing between vital interest and accomplishment.[1] In this chapter, the following topics will be discussed in order: (1) Interest and moral development; (2) relation of interest to apparent fatigue; (3) interest and the learning curve; (4) interest and memory; (5) interest and formal discipline; (6) the center of method.

[1] E. L. Thorndike, *Popular Science Monthly* (November, 1912), vol. 81, p. 249.

Interest and moral development. (1) If a child is constantly held to work in which he has no interest, he gradually develops the habit of divided attention, neglect of the work in hand, pretense, and activity only sufficient to satisfy the teacher or the one imposing the task. He weakens his moral nature, he tends constantly toward deception and hypocrisy. No experienced teacher can have failed to notice this tendency. John is not interested in his grammar. The work is upon the conjugation of the verb. It is abstract work. It is difficult. It makes no appeal to John. However, he is held in line by the threats of his teacher, the fear of failing of promotion, the coaxing and admonition of his parents, the dread of the disapproval of his classmates, and other like considerations. The task in hand continues to be abstract and uninteresting. He sees no use in it. In itself it makes no appeal to him. Nevertheless, John conforms, — but how? Does he throw his whole soul into the work, seeing its value and determining to profit by it? Far from it! He gives just enough attention and energy to satisfy the teacher, parent, and classmate. He thinks of the ball game while trying to study his grammar. Again and again he finds his attention drifting, and again and again he pulls himself together for the work before him. When the class is called, he is not prepared, but defends himself, if discovered, by saying that he put in full time upon the assignment. Anyway, he is about as well prepared as the others. He steals furtive glances at his open book, listens for whispered promptings from his classmates, "dodges and ducks," and comes away from the recitation more convinced than ever that the whole thing amounts to nothing.

Can any one doubt the harmful moral effect of the

situation just described? It would be somewhat, but not greatly, improved if the intellectual results were satisfactory. For " to possess all the world of knowledge and lose one's own self " is as awful a fate in education as in religion! Dr. Dewey made this clear enough in his doctrine of interest and will.[1] We know that right moral results can come only when the child's self is thoroughly identified with his task. But practice has been modified very slowly. Much of our elementary instruction is mediæval. A great work remains to be done in bringing our schools up to the new ideal.

Relation of interest to apparent fatigue. (2) The discussion of fatigue in this connection will be directed to answering two questions that are germane to the general discussion of motivation and the relation of interest to school work. First: Does ordinary school work produce fatigue sufficient to result in inability to do good work? Second: If not, how may the results of apparent fatigue be overcome in school work?

No attempt will be made to apply *a-priori* methods in answering the above questions. The work of solving psychological problems cannot be done by *a-priori* argument, and an awakened intelligence among the teaching profession is gradually refusing to listen to such argument. This same awakened intelligence is demanding that tests be carefully made. Mosso's tests [2] resulting in the well-known fatigue curve could not have failed to give diminished results from pupils at 10.30 A.M. and at 3 P.M. But the tests were not well chosen. Go into your schoolroom at 8.30 A.M. with tests in arithmetic. Keep these tests up until noon.

[1] John Dewey, "Interest as Related to Will," *Herbart Year-Book* (1895); also *Interest and Effort*, Houghton Mifflin Company.

[2] E. L. Thorndike, "Mental Fatigue," *Psychological Review* (1900). Reprint by The Macmillan Company.

After noon continue them until evening. Then plot the curve of your results. It will without a doubt show constantly diminished results. But are the diminished results due to mental fatigue, *per se*, or to disgust at the foolishness of your procedure in continuing a single line of work throughout the entire day?

Suppose you put your tests in a different form. Give a three-minute arithmetic test at 8.30 A.M. on Monday; a similar three-minute test at 9.30 A.M. on Tuesday; another at 10.30 A.M. on Wednesday; and so on at 11.30, 1.30, 2.30, and 3.30, until the tests have extended up to the close of the school day. If the tests have been made interesting and have been directed by a skillful and popular teacher, the results will be quite different from the results of the former tests. Instead of constantly diminishing returns, the results will show almost constant ability, with a slight increase that may be charged to the practice results of the tests themselves.

The above tests, and many similar ones, have actually been made. The results are known to be as indicated. Dr. Thorndike and his students have carried their tests far enough to state, without fear of disproof, that no actual mental fatigue results from ordinary school work. "The school work in the case of the school tested did not decrease one jot or tittle the ability of the pupils to do mental work." [1]

Dr. Thorndike reports eight tests upon people of various ages, before and after supposed mental fatigue. From all of these it appears that inability to perform mental work does not result from supposed mental fatigue. There is lack of desire, but not lack of ability.

[1] E. L. Thorndike, "Mental Fatigue," *Psychological Review* (1900). Reprint by The Macmillan Company.

A typical illustration from this series is Experiment Six. After a hard day's work, and with much apparent mental fatigue, the subject began at 3.00 P.M. to solve mentally four-place multiplication problems, a sample problem being $8967 \times 4532 = ?$ For more than two hours he continued this work with a speed practically constant, the time in minutes for the nine problems solved being 12.1, 10.2, 19.5, 12.4, 16.0, 17.3, 15.5, 14.2, 11.5.

In a series of tests [1] upon school-children, the results were similar, — "they do as well at the close of the day as at the beginning." The summary of the tests indicates that ordinary school-children are not fatigued by a day's school work, and that they do as well late in the day as early; as well after apparent mental fatigue as before. A further set of five experiments reported by Dr. Thorndike reinforces the conclusion from the other

[1] Following is a brief summary of the results of six tests:
Experiment 1. Four-place written multiplication; as, 9867 × 3425.
Results. Before fatigue — 375 students, 3359 units of work, 1004 mistakes.
After fatigue — 375 students, 3333 units of work, 1044 mistakes.
Experiment 2. Correcting misspelled words on a printed page.
Results. Before fatigue — 4917 lines, 10,482 words marked, 195 marked wrong.
After fatigue — 4871 lines, 11,385 words marked, 191 marked wrong.
Experiment 3. Reproducing figure series.
Results. Before fatigue — 3006 correct figures.
After fatigue — 3060 correct figures.
Experiment 4. Reproducing nonsense series.
Results. Before fatigue — 1081 correct.
After fatigue — 1056 correct.
Experiment 5. Reproducing letter series.
Results. Before fatigue — 997 correct.
After fatigue — 995 correct.
Experiment 6. Reproducing geometric forms.
Results. Before fatigue — 628 correct.
After fatigue — 594 correct.

experiments. The curves showing results were practically level, the result of training on the whole being stronger than the result of fatigue.

No doubt there is a limit where mental fatigue and exhaustion are reached, but it has been satisfactorily proved that no such limit is reached with normal pupils because of ordinary school work. But there is apparent fatigue and decreased output near the close of the day in most schoolrooms. How do you account for it? Dr. Thorndike concludes that the decreased output is not due to a lack of ability, but to distractions and to a lack of desire and interest. The remedy is not to shorten the day, but to make afternoon work interesting and worth while. " The chief responsibility for mental fatigue in the schools and for mental exhaustion in scholars falls upon the unwise choice of materials for study, the unwise direction of effort, the unwise inhibition of pleasurable activities, the unwise abuse of sense organs, and the unattractiveness of teacher and teaching."

This view shifts to the teacher's shoulders the burden of the responsibility for apparent fatigue in the schoolroom. The work must be *interesting*. Indifference must be overcome by *motive*. Repugnance must be cured by interest and variety. The sense of deprivations must be overcome by good air, freedom of movement, and an impelling interest in the successful completion of the work in hand. In short, this study of fatigue is a strong argument in favor of the enrichment and motivation of school work; in favor of making the child's vital interests more fully the center of the elementary-school program.

Interest and the learning curve. (3) Bryan and Harter's development of the learning curve in connection

with their studies of the telegraphic language [1] showed plateaus or periods of non-progress in the receiving curve. The sending curve was without plateaus and almost regular. Why the plateaus, or periods of non-progress, in the receiving curve, and were they necessary? Swift's improvement curve for ball-tossing [2] showed regular and well-developed plateaus. Dr. Swift agreed with Dr. Bryan and Mr. Harter that plateaus were a necessary part of learning and accepted the Bryan and Harter explanation of the causes of plateaus. But this was clearly a case of reaching a conclusion on too insufficient data. Bryan and Harter experimented on a single subject, and Swift was his own subject in the ball-tossing experiments. It remained for Dr. Book [3] to conceive of an experiment in the acquisition of skill in typewriting on a scale large enough and with records sufficient to enable him to draw authoritative conclusions. Dr. Book employed eleven subjects in his experiment. If a single subject developed a curve without a plateau, it would indicate that plateaus are not a necessary accompaniment of learning. Dr. Book found that plateaus are not necessary, but that they are almost sure to occur with any subject. His explanation is of interest to us in this discussion. Plateaus, critical periods, or periods of non-progress develop with the learner because of fluctuations in attention and effort. Lime dust from the tennis court divided Y's attention and lowered his score on one day. Any distraction, worry, or nervousness lowered the score of a subject.

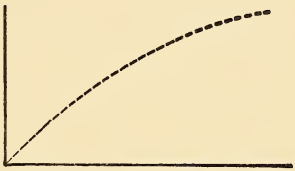
[1] Bryan and Harter, "Telegraphic Language," *Psychological Review* (1897), vol. 4, p. 27; *ibid.* (1899), vol. 6, p. 345.

[2] Swift, *Mind in the Making*, chap. VI; *American Journal of Psychology* (1908), vol. 14, p. 201.

[3] Book, *Psychology of Skill*. The University of Montana, Psychological Bulletin 53, series 1.

The best work and the most constant improvement were recorded when attention was spontaneous and undivided and when the hygienic condition of the subject gave perfect neural tone.

If the learning process is not necessarily accompanied by periods of non-progress, if under proper conditions the learning process is regular and steadily upward, then the energy of the teacher should be bent toward securing the proper conditions. And the most important condition for progress — spontaneous undivided attention — is best secured by giving the pupil a problem of vital interest to him, a thoroughly motivated situation.



LEARNING CURVE WHEN CONDITIONS ARE IDEAL

Interest and memory. (4) Common observation convinces us that the tenacity with which anything is remembered varies greatly. But in the last analysis the interest of the learner is found to be the chief determining factor. Where there is no particular or vital interest at stake, the nature of the material — its rationality and coherence — makes a great difference in the tenacity with which it is remembered. Again the concreteness of a situation, or the extent to which an individual brings bodily activity into the experience, increases the length of time that it will be remembered.

It is possible to be more specific and to give figures that have resulted from experiment and proof. Ebbinghaus, working with nonsense syllables,[1] concludes that one half is forgotten in one hour, two thirds in a day.

[1] See *Memory*, by Herman Ebbinghaus, translated by Ruger and Bussenius.

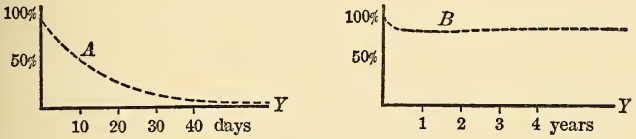
There is little incentive to remember a nonsense combination such as "ba-ta-sem-re-to-mi-lu-des." But suppose the syllables are part of a code, that they are received by a general in command of the armies of a nation, and that they mean "A division of the enemy, 50,000 strong, is attempting to turn your right flank." Under such circumstances, would the general have any difficulty in reproducing the message in code form, in transmitting it to others, and in remembering it as long as necessary? The ease with which it is remembered is due to the fact that it has taken on significance, vital significance. His fortune, his honor, and the fate of a nation are at stake. To him the syllables are not nonsense. They are charged with meaning, and a meaning that affects the greatest purposes of his life.

There are few, if any, experienced supervisors who have not seen school work as devoid of meaning to children as the nonsense syllables of Ellinghaus — the infinitive when presented abstractly to sixth-grade pupils, for instance. The pupils should not be censured for forgetting it. Rather the teacher should be censured for presenting it.

Thorndike's study of paired associates [1] showed a higher memory efficiency than for nonsense syllables because of the greater rationality of the material. The experiment involved the learning of the English equivalents of twelve hundred German words by twenty-two adults. Memory tests were given after each study period, thirty-six hours after the close of the experiment, and again thirty days later. Thorndike concluded that, with reference to paired associates, "it would not be far amiss to say that the central tendency would be

[1] E. L. Thorndike, "Memory for Paired Associates," *Psychological Review* (March, 1908), vol. 15, p. 122.

a loss of one twentieth in an hour, one tenth in three days, and between four tenths and five tenths in forty days." The matter involved in this experiment is fairly representative of ordinary school work, where there is a reasonable understanding, but no incentive in the way of a vital personal motive for success. We may expect, therefore, that the forgetting rate for paired associates will apply to most of the verbal-thought work called for in our schools, and that one half is forgotten in forty days. This is a sad comment on the efficiency of our schools. Is it not about time that we were consulting the child as to his interests and purposes in



FORGETTING CURVES FOR VERBAL-THOUGHT MATERIAL (*A*), AND FOR MOTOR-SKILL (*B*)

order that we may find more significant matter for our school work?

The curve *A* in the above diagram is a typical forgetting curve for verbal-thought matter. With nonsense syllables it would go down more quickly, and would extend less indefinitely. The more meaning, the more interest, the more personal motive there is involved, the less quickly the curve falls. For motor activity, and especially motor activity that gives pleasure and success, the curve (see *B*) falls but little. On the *Y*-axis it may be plotted with years instead of days, and it will extend indefinitely. The skilled axe-man may not handle an axe for years, but his hand loses none of its cunning. The swimmer cannot forget how to swim, and does not hesitate to plunge into a river

after years of absence from the water. The brain likes the motor response and gives a reward accordingly. It is a difficult matter to attempt to transmit the culture of the ages through the muscles, but there is much of the so-called culture that we are quite as well off without. In fact, we are soon without it even if we get it. We should present knowledge to children that is useful and usable, and we should put meaning and purpose into all school work. Meaningless material is six or seven times as difficult to get [1] and it is soon lost. When we consider the measured difference in results on nonsense material, verbal-thought material, and motor activity, it certainly argues strongly in favor of making school work significant, basing it upon the pupil's vital interests, and thoroughly vitalizing and motivating it.

Interest and formal discipline. (5) The doctrine of formal discipline as formerly held was constantly quoted as justification for the unreasonable things done in the schools. In fact the extreme supporters of this doctrine believed that subject-matter was made more valuable for training by its lack of inherent interest or vital appeal to the child. The work of education was conceived as the training of general powers, such as attention, reasoning, memory, and will, with the belief that training developed in one field was available for transfer and use upon an undertaking in any other field. Such a theory greatly simplifies educational procedure and enables us to assume relative indifference as to the selection of subject-matter. As educators, we really hope that the theory does contain much truth. However, common observation shows us that training does not spread; quite the contrary. The man with book

[1] C. S. Myers, *Educational Psychology*, chaps. XII, XIII.

knowledge is expected to show lack of ability along other lines and he usually does. The minister is easily duped; the school man has little business ability; the inventor permits the shrewd business man to reap the benefits of his genius.

Modern experimental psychology confirms the view of general observation, and experiments tend to discredit the doctrine of formal discipline. At the conclusion of extended experiments on judging magnitudes, Thorndike says:[1] "It is misleading to speak of attention, memory, observation, as there is no reason to suppose that any general change occurs corresponding to improvement in attention." The improvement which does occur is the improvement in training, in doing the particular thing in hand, and in getting more definitely in mind a unit of measure for this and similar work.

The conclusions of Thorndike are confirmed by Ruger[2] and others. Ruger concludes that transfer of training to closely related fields is approached through the acquisition of ideals of efficiency and through the learning of methods of control. It appears, therefore, that, even when the conscious effort is made to secure or to discover transfer of training, very little is discoverable. The mind is not an organization of general faculties, but, on the contrary, on its dynamic side, is "a machine for making particular reactions to particular situations."

What does all of this mean for the schools? If we abandon the view of the older psychology as to formal discipline and accept the now established view, it

[1] E. L. Thorndike, "The Influence of Improvement in One Mental Function upon the Efficiency of other Mental Functions," *Psychological Review* (May, July, and November, 1901).

[2] W. A. Ruger, *The Psychology of Efficiency.*

means that the selection of subject-matter is no longer unimportant. On the contrary, if school work is to function in the life of the pupil, it means that subject-matter and method must in themselves be worth while and significant. It means that after the child has acquired a mastery of the simple tools of knowledge, then subject-matter and procedure are all-important if schooling is to count as a positive force in the life of the pupil. In history, it means that the questions taken up for study and the method of attacking those questions should be such as to raise a conscious ideal of thoroughness in research in investigating any political question. It means that not only a method should be consciously developed, but that the pupil should be led consciously to make the transfer to the solution of significant present-day political questions. The clap-trap methods by which votes are secured to-day and the rareness of any thorough investigation of political questions by voters, indicate strongly that there is little transfer, even of method of procedure, from our former history teaching. It stops with teaching us *how to study history when in school.* We are certainly justified in insisting, not that the book shall be completed, not that rigid examinations upon facts shall be satisfactorily passed, but that, in the absence of a social organization of our course of study, the topics or questions discussed shall be such as to appeal to the child's vital interests if possible, and that the teaching shall be such as to establish a conscious ideal of efficiency which shall be applied consciously to the solution of problems of present interest. This means that educational procedure must cease to be static and formal, that it must become vital and dynamic.

The center of method. (6) In this section we shall

merely submit briefly that the center of method is not a subject logically organized, not a child psychologically analyzed, nor even a combination of the two. The center of method is a real problem, a child's real problem; a problem that a particular child has encountered and in the solution of which he is vitally interested.

This is a high ideal for the teacher, but not an impossible one. It would be easier with six pupils than with thirty or forty. But why use mass play all of the time? Why not break the class up into congenial, mutually interested groups for much of their work? Are we as teachers so tied to routine that we are unable to accept the consequences of an ideal? What may not the future hold for us if some one will but show us a better way?

The motivated work herein advocated could be justified in general terms by a study of the child's basal instincts; but the bearing is not direct enough. Considerations of a child's instincts are especially valuable in the early stages of school work, the work of acquiring the tools of knowledge. The instincts of curiosity, of self-assertion, of construction, and of acquisition are especially valuable in school work. The same is true of imitation. Even the instincts of pugnacity and fear may be turned to good account. But these instincts, as well as the fundamental sentiments, are very general. They do not point toward specific work. They do not help much in the selection of subject-matter. They have too frequently been used to justify antiquated methods and petrified subject-matter. To show their bearing upon motivation will require a separate and more extended treatment.

The six lines of evidence presented above should convince the teacher that the idea of motivating school

work is scientifically supported; that it is not a mere whim or fad, but that it has come gradually to be recognized as one of the most important and powerful factors in successful school work; and that it deserves immediate attention in the further organization of school work. It should lead every teacher to examine her work critically, to abandon formal textbook procedure and traditions, and to place the child, his interests, his real problems in the foreground in all teaching work. She should organize around the child. He is sacred; subject-matter is not.

CHAPTER IV

THE ORIGIN AND SOURCES OF MOTIVES

The analysis of motive. In planning the technique of her lessons, one of the teacher's first questions is, What are the sources of children's motives for mastering subject-matter and meeting the various requirements of the school? This is one of the most constant problems of the teacher. She needs to know the sources of motives that she may proceed wisely in using them. There are but few discussions in educational literature relating directly to the question. It is the purpose of this chapter to discuss the origin and sources of those motives which may be used in vitalizing school work.

In a number of his addresses and papers dealing with the subject-matter and methods of teaching in the elementary schools, Dewey has indicated how genuine motivation of the work may be accomplished. The following quotation [1] gives the point of view maintained directly or by implication throughout his discussions: —

> When the subject-matter has been psychologized, that is, viewed as an outgrowth of present tendencies and activities, it is easy to locate in the *present* some obstacle, intellectual, practical, or ethical, which can be handled more adequately if the truth in question be mastered. *This need supplies motive for the learning.* An end which is the child's own carries him on to possess the means of its accomplishment. But when material is directly supplied in the form of a lesson to be

[1] John Dewey, *The Child and the Curriculum* (Chicago, 1902), p. 32 *ff.* The italics are ours.

learned as a lesson, the *connecting links of need and aim* are conspicuous for their absence. What we mean by the mechanical and dead in instruction is a result of this lack of motivation.

In other discussions Dewey[1] speaks of the problem as a motive for learning and of the ideal as a motive for doing. He also shows how motive arises out of interest.

Charters's treatment of motives, following Dewey, concerns itself particularly with the development of motives for the mastery of the subject-matter in school studies. He shows that motives arise out of or operate in the form of interests, needs, and problems. He says:[2]

> Interest, need, and problem are all forms of motive.

Again:—

> There is no such thing as doing work in which one is not interested, or for which one does not have a need, implicit or conscious.

And, again, he shows that, in seeking to accomplish certain results with children, —

> subject-matter is used, subject-matter for which there is often no motive until the pupils recognize the necessity of learning this subject-matter in order to acquire control over their immediate interests. This recognition of lack of control on the part of the learner is called need. The problem is related closely to need [elsewhere he shows it is a phase of need] and both are necessary motives for the acquisition of new subject-matter.

In his discussion of motives, Rowe[3] points out the complexity of their origin as follows: —

> In so far as motive may represent a large genus of impulses, it includes as species those instincts, emotions, and interests which are *known* really to have moving power. . . . Aside

[1] John Dewey, *Interest and Effort in Education* (Boston), p 2.
[2] W. W. Charters, *Methods of Teaching* (Chicago, 1912), p. 146 *ff.*
[3] Stuart H. Rowe, *Habit-Formation* (New York, 1909), p. 147 *ff.*

from the instinctive and emotional species of motive, and perhaps built up out of raw material of similar sort, there are motives of a distinctly cognitive or reflective origin. Below the plane of a child's or an adult's ideal at different stages are the planes of his principles, his definite purposes, his standards, his rules of conduct, what he really intends to live up to, the whole mass of intentions that have grown out of previous experiences with life's many concrete situations.

An accountant may have no desire to work overtime; but when some one comes to him with a special difficulty, stating that he will pay well any expert who will help him out of the tangle, the accountant may consent. He thinks, "It will pay me, i.e., a motive has been given me; this corresponds to the kind of thing I allow myself to do."

He may then do the work partly from instinctive motives, like pride, curiosity, ambition, or kindliness, or because of emotional motives, such as the pleasure he anticipates in solving the difficulty, helping a friend, or repaying a favor; or he may do it with direct interest in his work as a motive, eagerness to get as well acquainted as possible with all its phases; finally, he may do it because he "needs the money," though in this last case the real motives are hidden, being really those which determine what he does with his money. The money-getting has perhaps only a secondary or borrowed, an "indirect" interest.

It is evidently impossible in given instances to separate these various instincts, emotions, interests, and motives, since motives include all the other really active forms of tendency, linking with them *a peculiar endorsing tendency.* [1]

Instinct the basis of motive. Fundamentally, of course, the motives which shape our conduct and spur us on to do worthy things are rooted in instinct, as Rowe shows. Practically, however, in the actual experiences of life, seldom does either the student or the teacher think of the relation of the vitalizing motive to its instinctive basis. Rather, the student finds himself spurred to effort by some practical need he feels, by an interesting problem which he meets, by a question he is anxious to answer. The teacher's work in

[1] Italics ours.

motivating the pupil's efforts is so to organize and direct the situation that the need, problem, or question arises in a vital, personal way. Undoubtedly this was the relation sustained by the teacher to all the efforts of the class which gave the May-Day party described on pp. 15-19. In the working-out of the problems raised by the party a number of instincts were brought into action, such as construction, sociability, play, rivalry, ambition, and love of approbation.

The large number of instincts brought into play in giving the party illustrates very well the complicated instinctive basis of the motives which vitalize our efforts in all our daily tasks. Even the acts of children in school grow out of social experiences mainly. They are not mere simple acts, each resulting from a single instinctive tendency.

The more the teacher knows about children's instincts and about how to use them in the educative process, the better is she equipped to find and carry out ways of vitalizing the school work of her pupils. Every teacher should possess an accurate working knowledge of one or more good treatments of children's instincts.[1] As Bagley[2] points out, "It is with these that education must start, and upon these its processes must ultimately be based, no matter how far it goes or how elaborately it organizes and refines its methods."

But while the educative process is based upon the instincts, they are, after all, only the basis.[3] Educa-

[1] See Kirkpatrick, *Fundamentals of Child Study* (New York, 1904), pp. 51–224; Rowe, *Habit-Formation* (New York, 1909), pp. 73–182; Bagley, *Educational Values* (New York, 1911), chap. I.

[2] See Bagley, *op. cit.*, p. 5.

[3] See Bagley, *op. cit.*, p. 8 *ff.*, for a clear statement in reference to the limitations of any educational system depending wholly upon the automatic operation of the instincts for its results.

tion must enable the pupil, working upon the basis of his instinctive tendencies, to become free from the operation of blind instinct and to control his acts in the light of experience and conscious purpose.

While the teacher will derive great help from knowing well the instinctive basis of her pupils for an interest in and a mastery of their school tasks, yet she must not expect that merely by equipping herself with a complete list of children's instincts she can supply impelling motives for all their school work. In the main the teacher does not lead her pupils to motives for work in terms of separate instincts. Their motives begin in the complex acts of normal children — such as writing a letter or playing a game. The teacher takes her cue for motivating her class work from what she sees her children doing, or trying to do, when undirected. She finds certain typical goals for which children strive. These are directly useful in enabling her to get her pupils to develop the ability she wants them to have in their school work.

These typical goals for which children naturally strive vary somewhat with the age of the children and with the variety and maturity of their experience; but the following tentative classification represents fairly adequately the different types of motives which are effective in impelling children to enthusiastic effort in their school work.

Different types of motive. *1. Earning money and acquiring property.* Practically irrespective of the child's age or condition, difficult tasks become attractive if one result of his work is having some money or property of his own.

This is seen in the eagerness with which children do such work about the home as washing dishes, caring

for the furnace, getting the milk, and so on, if a small weekly wage is paid. Many children always enter any writing contest offering an opportunity for earning money. In many cities where gardening is taught in the schools, large numbers of children plant gardens at home, tilling them with great care and marketing their products faithfully, because of the money they can earn. Such tasks are willingly and enthusiastically done. The money earned lifts the work required entirely out of the realm of drudgery.

Groups of children are similarly stimulated by opportunities to do something so they can earn money which they need. This is frequently seen in the group efforts of a club or of a class in school, They need some furniture, perhaps, or wish to present a gift, so they give an entertainment, or develop a play, or hold some sort of festival.

2. Competing for results, a reward, or an honor. Any one of these goals becomes a strong motive. A variety of instincts are appealed to; as, ownership, ambition, emulation, rivalry, love of approbation, courage.

The enthusiasm and hard work involved in spelling, oratorical, musical, and debating contests are accounted for by this native tendency in children to compete for results and to win honors.

3. Playing games. Any responsibility taken or work done through play or through taking part in a game is strongly motivated. A child willingly prepares and practices that he may do his part well in a game. He sees that his only right to take part with the group engaged in the game is ability to aid in winning the game. The fact that the ability gained in play is useful does not lessen in the least the child's enjoyment nor his wish to improve his ability so that he can be a leader.

Modern education makes large use of the interest of children in such games as the relay race in spelling and numbers; bean-bag in language, spelling, and numbers; mail-carrier and Santa Claus in beginning reading; baseball in spelling and numbers; and so on. A large variety of games are employed in language work; in teaching polite usage and the correct use of idiomatic language. Dramatization, which is so much used in reading and language work, gets results because of the interest of children in games.

4. Making things. The constructive instinct is strong in children of all ages. Anything involving the manipulation of materials enabling the child to express an individual or a group conception appeals strongly to him and renders a task involving prolonged effort and arduous work attractive to him.

All of the constructive and manual-training work in the schools is based upon this interest of children. It results in the children's making simple birthday, or Christmas, or Valentine gifts for parents or other relatives. Often the children of an entire room or class unite to produce such articles as a bookcase, a davenport, a rug, a couch cover, or a set of curtains for use in the principal's office or about the corridor or in the library.

5. Entertaining. The instincts of imitation, play, sociability, expression, ambition, rivalry, love of approbation, pride, and so on, find expression in entertaining. Children are aroused to wonderful effort in planning to delight a company of guests and in carrying out their plans.

It is very common for a child to give his playmates a little party at his home on his birthday or some holiday occasion. Even lower-grade school-children like

to prepare for a little " at home " to their parents and invite them to the school. The wise teacher gains from such an effort by the children's excellent motives for good work in all the lessons the parents see and for all the responsibilities the children carry in inviting, welcoming, and entertaining their parents. It is very common, of course, for the girls in domestic-science classes to entertain school officials, prominent citizens, or their parents when they give a "demonstration" dinner at the end of their domestic-science course.

6. Sharing. The activity of sharing is very similar to that of entertaining and rests upon the same instinctive tendencies. Just as the adult wishes to share with his friends the results of his labors, be they delicious apples, fragrant roses, a model dairy, or an exquisite painting, so children wish to share the products of their labors. Hard work becomes a delight when there is the prospect ahead of sharing with others the results of their efforts.

Good schools plan to give the children large opportunities for sharing with one another. Any interesting experience enjoyed by a group of children is shared with others who might enjoy it and profit by it. They may write it up and lend the papers to other rooms, or send children who talk well to different rooms to tell of the experience. The school assembly in which the entire school meets is an excellent place for sharing with the entire school the best any room produces. The preparation of the matter to be given at such an assembly is highly motivated by the native interest of children in sharing with one another.

7. Advancing one's self in the estimation of others. What person is not happy in a task, almost regardless of its difficulty, if he sees that it will enable him to rise

worthily in the esteem of others for whose good opinion he cares? School-children strive hard for good grades, that the teacher and principal may think well of them, that they may merit the esteem of their classmates, and that they may please rather than disappoint their parents and others who care about their progress.

8. Promoting self-development. This motive appeals more strongly with advancing years. It leads the student to undertake tasks involving long periods of effort, sometimes months or even years. It impels the student of science to undertake difficult and extended investigations, to assume great risks, and to endure great privation. Success is assured when this motive becomes dominant.

Under the influence of this motive, students are found not only meeting the requirements of the teacher in the preparation of lessons, but visiting scientific and historical collections and going to other sources of help outside of the school, such as to the city, college, or state library. Such students also insist upon solving their difficult problems and performing their science experiments unaided.

9. Preserving products and collections. This motive has a strong basis in the instincts of collecting, ownership, preservation. Children collect and preserve beautiful stones, postage-stamps, pictures, postal cards, playthings, and so on. Older persons preserve letters, gifts, heirlooms, or scientific collections. This motive may be invoked in getting pupils to keep well-organized outlines and complete notebooks in the work covered in history, literature, and science.

10. Mastering and conquering. The instinct to subordinate and control both matter and persons is one of the most imperious of man's tendencies. It asserts

itself in infancy in the child's desire to know, to understand, and to rule or to lead in his group. It grows in strength with succeeding successes and is checked only when ambition is crushed. The presence of this tendency in children is the school's greatest hope of getting the pupils to do their work. The school should train the children to solve problems and to meet difficulties unfalteringly.

11. Fitting for a life-career. While not functional in early childhood, the goal of preparing for a successful life-career becomes a strong motive quite early with ambitious children. Under the stimulus of this motive programs of work and hard tasks extending over a series of years are undertaken with enthusiasm and determination. An appeal to the child's desire for future success is seldom devoid of results and is most often met with a hearty response and a renewed will to work.

Many other motives help in determining the conduct and efforts of adults. A large number of motives arise out of one's social conditions and out of his obligations, appreciations, and ideals. The possession of a wife and family adds a strong motive for faithfulness and success. Being a public servant gives a strong motive for meeting one's obligations, that he may appear to set the proper example. Through their investigations and writing, leaders of thought come to feel the spur of the motive of obligation, causing them to support further the theories and views and practices for which they have become responsible to the public. Appreciating the influence of his acts upon others and feeling a concern for the welfare of others, develop in one those motives which render him temperate and abstemious and which inspire him to exemplary conduct. Likewise a person's definite ideals are dominating motives, im-

pelling him to effort and to conduct which will enable him to attain his ideals. While these motives shape the conduct of adults, they hardly have enough influence in childhood and youth to make them important in planning the details of the technique of teaching.

The typical lines of attack, indicated above, will be of service in motivating school work only as the skillful teacher in the execution of her work takes advantage of the ends which appeal to children. How those ends may serve as cues to the teacher, and how she may employ them in motivating the school's requirements, exercises, and tasks, will appear in the discussion of the results which may be secured in the various subjects of study when the children's efforts are genuinely motivated. We shall also see how the details of employing any one of the types of motives vary with the age of the children, with the particular situation giving rise to the task undertaken, and with the subject of study.

CHAPTER V

THE MOTIVATION OF READING

Establishing the motive. Probably all would agree that the ability and disposition to read constitute the largest result of the school's work with children. Ability to read is the characteristic mark of literacy. "Reading maketh a full man." It is the most economical means of gaining the ideas of other people and is absolutely necessary in keeping abreast of the times.

While children enter the public schools for the first time with considerable ability in the use of oral language, few of them possess the ability to read. The problem of proceeding from no ability in reading to the desired ability is a difficult one. It is a task requiring years of effort and patience. It requires the mastery of the highly complicated mechanical system which society has developed for expressing and recording thought. How complicated it is, the educated adult scarcely realizes unless, after reaching maturity, he has undertaken to acquire the ability to read an unfamiliar foreign language, say Greek or Russian, which presents both a new alphabet and new methods of expressing ideas. Even the problem of learning a foreign language at maturity can only approximate the difficulties of the six-year-old child who takes up the task of learning to read from his new book.

By whatever method the original attack is made in teaching reading, the teachers of the first two or three grades must proceed with large sympathy and with al-

most infinite patience and wisdom. Otherwise, the child's natural lack of interest in the arbitrary forms of the printed page will be increased into an antipathy for reading and for the selections read, with the result that the very ends which reading seeks to secure will be defeated.

The importance of the results sought through reading and the difficulties of learning to read both emphasize strongly the need of motivating the children's efforts in reading. While adequate motives for reading should be manifest throughout the work of every grade, it is essential that particular care be exercised to motivate properly the reading of the first two or three grades and especially the beginning lessons in the first grade. Miss Arnold[1] has wisely said: —

> To arouse desire and awaken conscious motive is the teacher's most important work, and in teaching reading it should receive first consideration. She, therefore, after securing such freedom and coöperation as promise a fertile soil for her seed-planting, calls the children about her to explain the purpose of the lessons which will fill their days.
>
> Perhaps she reads to them a story which they like, a new story which they have never heard. When she reaches the interesting climax, she pauses to say, "I have n't time to read the rest of the story now. How I wish you could read! Then you might take the book and read the story for yourselves. Would you not like to learn to read, so that you could read stories like these?" . . .
>
> One teacher suggests writing upon the board some sentence which has been whispered to her by the children, and then calling an older child from another room to read the secret. This is done again and again, until the children are eager to share the power which their comrade possesses and turn gladly to the tasks required of them, that they may the sooner reach their goal.

[1] Sarah Louise Arnold, *Learning to Read* (New York, 1899), pp. 17–19.

A good means of motivating the children's first efforts in reading consists in making it necessary for the various members of the class to be able to read the words and expressions which tell how to play the games used. How such an approach is employed in the first reading work is clearly shown in the following[1] explanation of the way the early lessons in reading are developed: —

A big yellow ball is in sight. The teacher steps to the board and writes, speaking the words and sentences as she writes them the first time. The words below, which are in italics, are the ones which are written on the board. The others are spoken only.

"*Come to me, Ruth.*"

"*Come to me, John.*"

"Let us have a game of *ball.*"

"Do you see a big *ball,* anywhere about?"

"You may get the *ball.*"

"After the first time the teacher points to the word *ball* instead of speaking it. After she receives the ball, she sings a simple little melody: —

"My ball, I want to catch you, one time,
Two times, three times, four times, five times, six times."

She bounds the ball rhythmically to John as she sings.

At the conclusion of the song the teacher says, if it can be said truly, "John played well. Let us do this for him." And she writes the word *clap* upon the board and gives John the suggested applause.

She next writes, *Come to me,* and calls Lucille to her. She and Lucille play as before and at the close of the song she points to the word *Clap,* saying, perhaps, "I think we ought to do this," and joins in the applause herself.

The word *ball* and the sentences *Get the ball, Come to me,* and *Clap,* are used again and again during the twenty minutes, until each child has had his attention centered upon them several times. He soon finds that he needs to remember what the strange marks say or else he is at a disadvantage in the game.

As the children pass to their seats they touch "the name of

[1] Briggs and Coffman, *Reading in Public Schools* (Chicago, 1908).

the game we played" as they find it here and there among the words on the board.

Another day the teacher will write the word *sing* on the board as she asks the children to join in the music. She will give the words *rise* and *march*, when the time arrives for the direction of these activities.

Still later other games may be introduced which call forth such sentences as, *Form a circle, Choose a partner, Skip*, etc.

As the foregoing illustrations show, a child's reading is not definitely motivated unless he is consciously working at it to accomplish some specific end which he is anxious to attain — for example, learning to read so that he can finish the interesting story his teacher began to read, or so that he can take part successfully in the games played.

The motives employed must be so varied as to insure the children's gradual improvement in all phases of reading ability. Four main lines of growth must be kept in mind: (1) Ability to recognize immediately the words of the printed page. This requires much drill and practice. (2) Ability to grasp readily the relationships existing between the parts of a sentence and between the sentences in a paragraph. (3) Ability to sense the unity and the atmosphere of the selections studied. (4) Ability to impersonate more or less fully the characters appearing in the matter read. Also, to insure improvement in all phases of oral reading, motives for good oral expression should be provided. Children should be trained to gather clearly and hold well the thought expressed in a printed page and to present it orally, with sufficient accuracy and force to convey to the listening audience the exact shades of meaning intended.

Choice and treatment of selections. Often a motive for reading, although definite and specific, is sufficiently inclusive to motivate highly all phases of interpretation

and of oral expression. Such a motive undoubtedly inspired the efforts of the fourth-grade children in the Francis W. Parker School when they were reading and studying William Blake's poems preparatory to presenting the results of their work before the school in one of the morning assembly exercises. It is evident from the report [1] that these children, under the leadership of their teacher, were wonderfully inspired with the opportunity to present an interesting, profitable piece of work before the other children and the faculty of the school. That they might explain Blake's poems as they did, and present them entertainingly, they must interpret them fully within the limits of their ability, and also must be able to read them orally with such force and accuracy of physical response as to convey correctly their own interpretation.

The care shown in selecting from Blake's writings those poems and parts of poems which the children could appreciate and enjoy illustrates well the discrimination which teachers should use in their teaching of selections from the school reader. Teachers should not feel that they must have their classes study and read the selections in the order of their occurrence in the reader, nor that they should be obliged to use every selection at some time. The selections used should be taken when each will be of most interest to the class. With certain classes, some selections should be entirely omitted because they are too difficult for that particular group of children, or because the class has no adequate basis for interest in them.

Fully as important as careful choice of selections is the treatment of each selection studied. Since oral reading

[1] *Francis W. Parker School Year-Book* (Chicago, June, 1913), pp. 19–27.

is the chief means teachers can employ in the first two or three grades in testing the reading ability of children, most of the material used in these grades should be well adapted for oral reading. Interesting narratives, spirited dialogue, and selections with dramatic action lend themselves to good oral expression. Other material of the descriptive and informational type, if used, should be so treated that it is clearly understood; but it is wasted effort to try to have the children read such selections well orally. In the upper grades, of course, they should be given the ability to read interestingly the descriptive and informational material found in geographies and histories.

Some selections, such as *The Legend of Sleepy Hollow*, contain not only conversation and narrative, but also descriptive parts. In such a selection the descriptive parts should be talked about and studied until they are mastered as fully as the purpose in the study of the selection requires. If the selection is read through orally before leaving it, it is better usually to maintain its unity by telling briefly what is in the descriptive parts, reading orally only the narrative and conversational sections of the selection.

The teacher must be careful also to use the supplementary reading material wisely. If the book in use is a group of selections, the same discrimination should be used as in the case of the basal readers. If, however, it is an informational book treating nature-study topics, for example, those parts should be used which the children's experiences enable them to understand or which will help them in solving their nature-study problems. If it is a book such as *King Arthur and his Knights*, it may be used in some schools to supplement the history course. In other schools providing no such history

course, it should be so read that the children will enjoy and appreciate it. In the latter case, some of it should be read orally, especially the narrative, dramatic portions in which much dialogue occurs, but the other portions should be talked about and treated so as to give unity to the story without attempting to read them orally.

Experience shows that in practice teachers may successfully motivate almost all of the children's work in reading and literature. Everything the children do in learning to read or in the study of worthy selections is done for one or more good reasons. If the children are conscious of these reasons, they serve definitely to motivate the work in hand. In the work of any particular group or class of pupils, the motive or motives operating will be specific and definite rather than general, but each specific end will probably fall under one of the general reasons indicated hereafter for learning to read or for reading.

The use of games. While the foregoing reasons for learning to read are particularly effective when children are beginning, they are also functional to some extent as motives for later reading. For instance, as already stated, children cannot take part in certain kinds of games unless they can read. Finding that they are thus put at a disadvantage, they are anxious to learn to read. The teacher's use of this motive has already been discussed. The writer recalls a little girl who often evidenced, before she learned to read, how she was at a disadvantage in playing certain games with cards bearing the names of animals with their characteristics, or the names of authors with some of their writings, or the names of inventors with their leading inventions. Her success depended upon remembering what was on the

cards. Failing in this, she would lose, and under such circumstances I have heard such remarks as "If I could read, you would not have won that book"; "I'll be glad when I learn to read; you won't beat me so often then."

The primary teacher who, by handing him the card, rewards the child who first speaks the word she "flashes" before the class on a card, is motivating his drill work in reading by treating it as a game in which the one wins who holds the most cards at the close of the recitation. The successful primary teacher, as a means of motivating her work, makes free use of the child's desire to take part in games and to win. This is particularly important in the drill phases of school work, for the complete mastery of which she cannot rely upon the child's native interest and joy in repetition.

The following suggestions are typical of a large variety of games which successful teachers use with excellent effect in motivating the drill essential in fixing the reading vocabulary of the beginner; —

Mail-carrier — One of the children passes out the words which are printed on cardboard, distributing them one at a time to the children until all are given out. Each child reads the letters (tells the word on each of his cards) he received.

Santa Claus — Played at the Christmas season just as *mail-carrier* is played.

Jack Horner Pie — Hide the words the children know in the sand-table full of sawdust. The one who digs out the most words which he knows wins the most plums and has the right to make the next pie by hiding the words again.

Guessing the word from the initial sound — The teacher or a child says, for example, "I am thinking of a word beginning with *m*." The children who think they know tell in turn the words they have in mind. The following is typical of what occurs:—

"Is it 'me'?" "No."
"Is it 'my'?" "No."
"Is it 'may'?" "Yes, it is 'may.'"

Then another sound is given and similar guessing follows. Sometimes *Guessing the word pointed to* is played very much as the game of guessing from the initial sound is played, the difference being that one or all of the children cover their eyes while the teacher or a child points to a word. Then the guessing begins with resulting conversation similar to that just described.

The express-train reading-trip — The aim is to see how quickly the class, participating individually in turn, as each new word is pointed to, can review from the chart or blackboard the entire word list they have mastered.

Other games of great variety are in general use. Various names are employed by teachers to designate a game. So familiar to all that they need not be described are such games as *Pussy wants a corner*, action games, *post-office*, and *the visiting game.*

Other motives. Closely related to the child's desire to play games is his wish to be able to read the little notes and invitations he receives from his friends. Children are also anxious to take part in the reading of the little dialogue selections found in their readers; but they realize that only those who read well can engage in this exercise to advantage. Dramatization supplies a similar motive for reading well. Those who read well are usually best equipped to take the parts in the dramatization of the lesson. The skillful teacher motivates further the efforts of her children in learning to read by allowing those who have tried hard and who have succeeded reasonably well the distinction of reading the entire story to the class, to a higher grade, or to the assembly in which the entire school and others, perhaps, are gathered.

The desire to be able to finish reading an interesting story started by some one who can read is a strong motive to the child who is just learning to read. Every parent has observed with what intense interest a little

child approaching the school age watches an older brother or sister who is just learning to read. The younger child follows the older one in an attitude of admiration amounting almost to awe, saying plainly, "I 'll be glad when I can read and can find the stories in books all alone." The same motive, somewhat extended, actuates the child in his reading after the stage of beginning reading is passed, causing him to read stories and entire books which he has reason to believe will be interesting to him.

One of the strongest motives for reading arises from the need children find of being able to read in order to accomplish certain practical ends in which they become interested. A child may wish to compete in a garden contest which the schools have instituted or in a city-beautifying contest which some civic-welfare organization has launched. In pursuit of such an end, he needs to read that he may gain information as to what to plant and how to plant it.

Many practical needs for reading ability are constantly arising in the experiences of children. A kite is wanted. Catalogues must be consulted in making an order, or an explanation of how to make a kite must be found and read intelligently. If a complicated toy, such as an engine or a piece of electrical apparatus, is received at Christmas, the directions for assembling and operating it present a very practical need for reading ability. The writer remembers well that one small boy's first need to consult the encyclopædia and a text on physics grew out of his need to know how to connect up some batteries to an electric engine. A little girl finds herself just as anxious to read, that she may interpret her mother's cook-book, especially if she is granted permission to bake something as a surprise to the other members of

the family. Professor Charles H. Judd has an entire lecture devoted to setting forth the need and value of such interesting, practical reading as may be found in catalogues from manufacturers, publishers, and mail-order houses, in the advertising pages of standard magazines, and in such magazines for boys as *Popular Mechanics* and the *Scientific American*, and for girls as *Good Housekeeping* and the *Ladies' Home Journal.* Practice in accord with the views he presents demonstrates satisfactorily the appeal such reading-matter makes, especially to children of the intermediate grades. Since such reading may be done in any school without cost to any one, every school should make definite provision for it.

The strongest motive for reading probably arises out of the social value of reading. The ability to read enables the child to share the results of his reading with his associates, bringing to them, for their profit and delight, what he has gleaned from his reading. Because of the stimulus that sharing their reading brings to children, the school program should make definite provision for enabling the children to exchange the results of their reading.

A large variety of reading may be secured by the school from the children's pleasure and delight in thus sharing their reading experiences. It is this motive which causes different children to volunteer to read the same sections of a story. Each wishes his hearers to enjoy some emotion or picture or rhythm which he has enjoyed and which he feels he can cause others to enjoy through his reading. In working upon a topic in history or local civics or school gardening, it is his desire to contribute his mite in enabling all to get a well-rounded view of the topic which inspires each child to search and

study for something to report at the next meeting of the class. Every teacher who has tested it knows the stimulating effect upon the children's reading of an opportunity to read a good story which they have enjoyed for the entertainment of another grade, a meeting of parents, or a general audience. The same motive leads children to search for new riddles or jokes or stories in their home reading. They are delighted to find something new and interesting which they may share with their classmates.

The following reports from two teachers who allowed their children to share their home-reading experiences are fairly typical. A second-grade teacher says: —

To induce the children to bring in outside reading, they were given the privilege of conducting one opening morning exercise per week. Their aim was to entertain their classmates and any friends who might be present. Two leaders, chosen by the school, one week in advance, arranged the program. These leaders selected the best reading-material brought in by the children and also the boy or girl best fitted to appear before the school. These results seemed evident: (1) A continued search for stories at home, enlisting the aid of parents and neighbors; (2) a keen desire to read well enough to have a place on the program; (3) an appreciative audience; (4) wholesome rivalry and criticism on the part of the class; (5) a greater interest in story-telling developed, as some of the stories were read at home and reproduced.

A third-grade teacher reports the following selections brought by the children to read to the class from their out-of-school reading: —

Name of Book	*Selection*
Baldwin's Third Reader	The Apple
Baldwin's Third Reader	Boys
Baldwin's Second Reader	The Pet Squirrel
Chatterbox	The Story Bob's Father Told
Happy Home	The Dog Who Had No Home
Baby's Garden of Story and Rhyme	My Jumbo
Great Big Story Book	The First Party

Old Mother Hubbard.....Old Mother Hubbard
For Dolly and Me.....The Music Lesson
Who Killed Cock Robin
The Marriage of Cock Robin
Easy Steps.....The Creation
Fun in the Country.....Tib
At the Circus.....The Lions
Cinderella Story Book.....Grandma's Doll
Proud and Lazy.....Dolly and I
Graded Literature First Reader. First Sight of Snow
Graded Literature Second Reader
The Ant and the Grasshopper
Black Beauty.....Chapter IV
Black Beauty.....Chapter V
Black Beauty.....Chapter VI
Robinson Crusoe.....Robinson Saved
Æsop's Fables.....The Frogs Asking for a King
Little Prudy.....Chapter II
Jack and the Beanstalk.....Jack and the Fairy
Jack and the Beanstalk.....At the Giant's House
The Foolish Fox.....The Tub Where Rain Is Kept
Stories of Pioneer Life (Bass).....The New Home
True Stories of Olden Days.....Queen Boadicea
Little Chrysanthemum...In the Flowery Kingdom
Night Before Christmas and Other Stories
Willie's Generosity
Adventures of a Brownie and Other Stories
Little Snowdrop
Puss in Boots and Other Stories.....Puss in Boots
Stories to Read or Tell (Foucher) The Stone Cutter
Little Folks' Magazine..... Betty's Adventure
Decatur Review (Sunday).. Story of a Maltese Cat
Advertisement of Youth's Companion
Jack and Betty

Another valuable means of stimulating the children to an interest in bringing to the school valuable material from their outside reading is that of asking them to bring what they can find upon a topic in which all are interested. A third grade whose efforts one of the writers observed became greatly interested in their language

work in reading and talking about spring — the changes it brings, why we enjoy it, and so on. At the conclusion of a very interesting lesson, the teacher asked each child to bring to the reading-class the next day any poem or story of interest on spring. The reading-class the next day was overflowing with enthusiasm. Every child was not only eager to present his own contribution well, but he was alert to hear what each of his mates contributed. Interesting topics in nature-study, geography, and history afford a similar opportunity for a valuable reading-hour.

A motive for reading which is always effective with certain types of children and which rises into increasing prominence as the children mature and advance in ability, is that of reading merely to extend acquaintance with literature and for the sake of mastering the best that has been recorded by the world's greatest thinkers and writers. With the dawning of adolescence, this motive leads many children to read extensively from a large number of authors. One of the most important objects of the reading and literature work in the public schools is the establishment of this motive as dominant in the lives of children.

CHAPTER VI

THE MOTIVATION OF LANGUAGE AND COMPOSITION

Establishing the motive. The teacher's effort in language and composition work should be to preserve the spontaneous, free self-expression, characteristic of most children upon entering school, and to secure in them steady growth in the mastery of style and form, so that both their oral and written expression may be effective. When playing, children talk naturally and freely about their experiences. They express themselves forcibly and with delightful spontaneity, although with many crudities. The school should seek to encourage and develop this oral self-expression. Written expression should be introduced gradually from grade to grade. As the children acquire the ability, it should increase in prominence. If the school can bring the children's speech and writing up to accepted standards without crushing spontaneity and freedom in expression, the ends sought through language teaching will be accomplished.

Two very different methods of attaining these results are employed by teachers of language. The more common method is to assign the language lessons from the book in use, telling the pupils to do what the book directs. A large majority of the teachers who depend upon the book do not even vary the order of the lessons in the text. They teach the book with a sort of blind hope that power to speak and write good English will result.

The other method, which every good teacher is using

more and more, treats the language book, not as a task-master, but as a source of help and information. Such a teacher notices the speech and writing of her class from day to day, and their evident needs determine the topics she teaches. The order in which those needs appear determines the order in which she takes up the lessons of the text, and the ability of her class gauges the use she makes of each lesson. Such a method of work keeps in view the language ability which it seems reasonable to expect of the class, and then looks about for things that need to be done.

Teachers are seeing that if the free, spontaneous expression found in the out-of-school speech of children is to be preserved in the school, the composition work must concern itself with experiences and needs which are as real as those which children talk or write about in their simple play, social, and business experiences outside of school. At home and in play, the child asks for things he really wants. He applies for a job he is anxious to secure. He states his reasons for asking a favor of his playmates or his parents. He writes to a business firm ordering something he needs. He exchanges notes or letters with his friends and replies to invitations he receives from them. His talking and writing in all of these typical situations are merely a means of getting what he wants. In no case does the average child talk or write merely as an exercise for the improvement of his ability in self-expression, although exceptional children may sometimes do so. This improvement comes, however, as a result of continued practice when under the necessity of getting something that he wants.

The teacher's first large problem in helping her pupils to talk and write better is finding by talking with her classes things they really need to talk and write about.

These exist on every hand, of course. The teacher merely needs to see that they are the best topics she can possibly choose. When the pupil talks or writes in school to accomplish something he really wants to do, the composition exercise becomes a vital experience to him. He wants to do it and every detail in the process becomes definitely motivated for him.

The experience of successful teachers of composition shows that under perfectly natural, normal conditions there are in every school many needs for talking and writing. Things the pupils keenly desire to do are (1) to acquire something of value; (2) to communicate with others; (3) to share with and entertain others; (4) to preserve something in written form; (5) to improve in ability to use pleasing, forceful English. All of these objects furnish real needs for talking and writing.

Of course, the stimulus or motive for talking or writing is always a feeling of need, a desire to accomplish a definite thing, as will appear in the following discussion; it is never a general, undefined feeling directed toward a vague, general end. The purpose of the remainder of this chapter is to set forth concretely how the language and composition work in the course of study of the school is definitely motivated for the children.

The desire to acquire property. The desire to own property — money, a prize, or anything possessing commercial value — shows itself early in the life of the child, as was pointed out in chapter IV. For a little money, children are fairly faithful in milking, gathering eggs, washing dishes, marketing milk, tending furnace, cleaning snow from the walks, and so on.

This natural desire to acquire things of value may be used in various ways by teachers as a basis for language and other school work. The publishers of standard,

popular magazines constantly appeal to this desire for commercial gain by offering money prizes for the best articles on announced topics. In school work students may be stimulated to compete against each other for a prize. This was the nature of the contest when the high-school English classes in a certain city competed for the prizes awarded by a daily newspaper for the best original stories. This contest has been participated in annually by the students of this high school since 1896. The number of participants annually varied from thirty in 1902 to one hundred and sixteen in 1910, averaging sixty per year. The children who wrote the papers referred to below, on the attraction and protection of our song birds and birds of plumage, were competing for the prizes which were to be awarded. This desire for personal gain is in no sense an objectionable type of emulation, especially if emphasis is placed upon winning the prize rather than upon beating the other contestants.

A much better type of stimulation is found, however, when the children of a class or school coöperate to make money, as when a graduating class decides to write a dramatization and to put it on as a public performance to make some money to purchase a class memorial for the school. Similarly, a good problem is for the English classes to develop a play from some of their English work, that it may be staged as a benefit performance for such objects as purchasing a piano or replenishing the depleted treasury of the athletic association.

Reference to three sets of papers written under the stimulus of the commercial motive seems desirable by way of illustration.

A public-spirited citizen, who had a beautiful home at the edge of a small city, and who missed greatly the song

birds and the birds of plumage from his shrubbery, felt that the children might do much to promote the return of the birds to his city, if they but understood their value from an æsthetic and commercial standpoint. He therefore offered to award ten dollars in prizes to be distributed by the school to those pupils who wrote the best papers upon "Ways of Attracting and Protecting our Song Birds and Birds of Plumage." It was decided to distribute the benefit to as many pupils as possible; hence, one first prize was offered, one second, four third, and two fourth. Thus, eight children received something in return for their efforts. This work was managed in such a way that the children of the elementary schools throughout the city were working upon the problem for some weeks before the writing was done. The aim of the citizen in offering the prizes seemed actually to become the purpose of the children, as was seen from the good attitude they took toward the birds. The compositions not only represented an abundance of knowledge and experience on the part of the children; but they were, likewise, a true representation of the serious plans of the children for attracting the birds to the community.

It is interesting to note that the prizes were distributed to representatives of all the grades above the third. Two went to fourth-grade pupils, one to a fifth-grade pupil, three to sixth-grade pupils, one to a seventh-grade pupil, and one to an eighth-grade pupil. Fifteen pupils received honorable mention, the honors being distributed in the grades above the third, just about as the prizes were distributed. In all, something like seventy meritorious papers were filed.

In awarding the prizes, the points considered and the importance assigned them were determined in the light

of the purpose of the donor, and were as follows, in the order named: —

(1) What the pupil had observed about birds and had done to attract birds.
(2) Information gained from others and from books as to bird habits, bird values, means of attracting and protecting birds.
(3) Pupil's attitude toward attracting and protecting birds.
(4) Literary quality.
(5) Formal points, such as neatness of papers, spelling, punctuation, and so on.

It is unnecessary, of course, to print any prize paper in full. Quotations [1] have been chosen from two types of papers, one of which is academic throughout, showing well-organized information as to how birds may be attracted and protected and in reference to the value of birds. It is written by a sixth-grade pupil. The introductory paragraphs are as follows: —

Birds are among our most useful animals. Without them the world would lose much of its beauty. Their beautiful plumage cheers everyone around them, as their sweet song delights them. Some birds are useful as scavengers and clean the filth and dirt from the streets, but the greatest uses of birds, are the harmful insects that are destroyed by them. The insects, that would ruin one billion and a half dollars worth of fruit, vegetables and forest trees a year are destroyed by the birds. If for no other reasons these would be proof enough that birds are of great value to man.

Some birds are easily tamed, but others need to be taught confidence in a person before they will venture near. If we wish to have the birds near our home we must attract and protect them in various ways; a good one being, to provide a bird "lunch counter." By this I mean we should put a board or box near the house, on which a piece of suet is nailed, so

[1] The actual language and punctuation employed by the children is preserved in all work quoted in this chapter.

that the birds may pick at it but not carry it away. Also food of different kinds may be placed here; garden worms, seeds and bits of bread.

The paper then shows in two paragraphs what should be done to attract the oriole and the hummingbird. It then shows how the coming of the white man has resulted in the disappearance of the birds. The closing paragraph is as follows: —

To have birds around our homes we must protect them and try to win back their confidence. We should allow no one to climb the trees in which there are birds' nests, nor rob them, nor should we let anyone shoot at them with a gun or slingshot. If a young bird falls from its nest we may be able to coax it to us and put it back or in some safe place, where a dog or cat could not devour it. We may take it into the house and feed and care for it till it is able to care for itself. Some men, even some farmers, to whom they do so much good, think birds are of no use, but they are of great benefit, for, as James Russell Lowell said, " Nature fits all her children with something to do."

The second paper quoted from is very different in style; but the writer is no less serious and forceful in her purpose. It runs as follows: —

What 's that? Who says the birds are of no use to us? The birds are among our best friends. There would be a great famine if there were no birds. They protect our fruit trees, grain, shade trees and vegetables by destroying injurious insects. Not only that, but some of them kill mice and other harmful creatures.

Did you ever have the experience of talking to a songster? If not, get up some morning very early. Beat the sun to the woods and enjoy the daily concerts the birds give. It will acquaint you with some friends who will not forget you if you are kind to them. Sit under the trees and scatter crumbs of bread and cake about you and you will be surprised to see how quickly they will make friends with you. Practice this every morning and you will learn to love them as well as they do you and you will not kill one unless it is an accident. I am

always delighted after a long dull winter to hear the sweet "to-wheet, to-wheet!" of the bluebird, telling me that spring is here again.

Another illustration of pupils writing for money is given below. The circumstances, however, are somewhat different as the pupils in this instance are endeavoring to produce a salable article.

A certain fifth-grade class that wished to raise a small fund decided to make a history booklet, for which they rewrote some of the history stories they had enjoyed in a set of supplementary reading-books. These booklets were carefully prepared, illustrated, and bound in a neat cover. They readily sold for twenty-five cents each. The following quotations illustrate the quality of writing which the children did in preparing the sketches for their booklets: —

The Boston Massacre

Because they came from England, the colonists called her the "Mother Country." They showed their love for her by fighting for her against the French. England sent soldiers to protect the colonists against the French and Indians to prove her love for them.

By and by the Mother Country forgot this kindly feeling. She took their rights away from the Colonies. This was more than they could endure. They wrote to King George, telling him they did not like this treatment. He replied, "I will tax you in all things whatsoever."

The British regiments which arrived in Boston to enforce the unjust laws were unwelcome guests. Trouble soon followed and on March 3rd, 1770, five Boston Boys lost their lives in the Boston Massacre. This helped to bring on the War of the Revolution.

The Battle of Bunker Hill

This important battle was fought July 2, 1775, near Boston. The Americans heard that the British intended to build a fort on this hill, so they determined to get ahead of them. One

night William Prescott with twelve hundred men crept noiselessly to the top and threw up earthworks.

The battle which followed next day was a victory for the British but it was dearly won. Prescott knew that his men had very little ammunition and no bayonets on their guns. He ordered them to aim low and not to fire until they could see the whites of their enemies' eyes.

When the Americans retreated, Prescott was the last man to leave the fort. The brave Gen. Warren fell on the very spot where the monument now stands. This battle did much to encourage the Americans for they knew they had brave soldiers and were able to win from even British Regulars.

To raise funds with which to make up a deficit in the treasury of the athletic association, the pupils in the English classes, who were studying Irving's *Legend of Sleepy Hollow*, decided that they would write a little comedy in four acts, entitled *Brom vs. Ichabod*. In reporting the undertaking, the teacher in charge of the work says: —

There were fifty-odd pupils in the two sections and each, except two, wrote independently a play consisting of four scenes. This last was, in the teacher's estimation, the most valuable part of the work. About three weeks were occupied in bringing the play to this stage of its completion and this ended the class work upon it.

The pupils had done a really remarkable amount of thinking, planning, and writing and all apparently with great enjoyment. The result was a mass of somewhat doubtful dramatic material — about fifty four-scene playlets. This was now sifted by committees of five, each committee taking charge of one scene and reading and selecting, rereading and re-selecting, until four or five of the best of each scene remained.

Four scenes were finally judged the best and their respective authors then re-wrote, using any material from other papers which had been thought good and fitting the various scenes into a sort of whole. A few — very few — suggestions were made by the teacher, but the play, as it stood finished, was the work of fifty girls and boys, set and polished by four.

A comedy of this sort, of course, gives little opportunity

for beauty of phrasing or niceties of diction. Perhaps for that very reason it appealed greatly to the boys, who entered with much vim into its action and humorous portrayal. The Dutch caps and frocks appealed to the girls. And there was, withal, a pleasing spirit of coöperation, of willingness to be subordinate if it was for the good of the "play," that was of more value than many plays.

That all gained an increased appreciation of, and insight into, dramatic structure from their efforts at play-making was apparent when a real drama was read later. The classes that had *made* a play could better *see* the scenes they read. They demanded to know how Portia and Shylock should be dressed and discussed the stage settings and "properties." They even dared to see the inconsistencies in a Shakespearean plot and difficulties in the time scheme. But yet they were not overcritical, for did they not know, from experience, how hard it was to make everything "fit" in a play?

Many opportunities for doing composition work under the influence of the commercial motive may be found in any school. Wisely used, not only will good language results be secured, but other desirable results for the children, the school, and the community will be gained.

Using the need for communication. Most of the composing — both oral and written — which mature people do in the routine of business affairs and social life grows out of the need for communicating. Jobs must be secured, so men interview employers or write letters of application. Merchandise must be sold; hence salesmen present their wares both in personal interviews and by letters. Information and advice must be had as a basis for wise investments; therefore clients present their questions to attorneys and other experts, and they in turn render their oral or written opinions. One's friends are constantly extending social courtesies, and they are both acknowledged and returned.

These communications growing out of business and social situations are essential to the success of those con-

cerned. They spring out of their real needs. They aid the solution of actual problems. They achieve purposes in the lives of those interested. They are not indulged in as pastime, nor do they result from an assignment on the part of a superior officer calling for a letter to an imaginary person or for a composition on some subject which, however interesting, is of no vital concern to the writer and of no consequence in solving a real life-problem.

Plenty of real needs for communicating by the students arise in connection with school enterprises and in the management of student affairs. In meeting these situations, information must be sought, demanding oral or written composing. Successful undertakings should be reported to others whom they may interest; hence oral or written compositions are needed.

The teacher who is alert to this source of composition material finds more real needs to be met than she can use in the language work. It is only the teacher who interprets student needs in terms of the pages of a text who fails to use these real life-situations as a means of improving the speaking and writing ability of her students.

The results developed in meeting and solving actual problems which arise in the regular routine of school work may easily be illustrated extensively. The following are typical of the communications which children find need to write: —

First, letters written in seeking help or information. This was sent to a second-grade teacher by the children of a sixth grade who had met a need they could not satisfy otherwise: —

Dear Miss B: —

We would like you to come up and tell us about "Starved Rock" from 1.30 to 1.45 this afternoon.

Very truly yours.

These notes were written to the superintendent of schools by the third-grade children in one school: —

Dear Sir: —

Won't you come and grade our school ground? Because when it rains the school ground fills with water and there is just lots of days that we don't have any outdoor recess and we would be very much pleased if you would grade it or do something to it. I think it would be nice if you would ask the Board of Education to help our school ground. Well, I will close.

Yours very respectfully.

Dear Sir: —

Will you please ask the members of the Board of Education if they will get us a cabinet so that we can keep a store and have some paper money. That will help us to learn our table of 3's.

Respectfully.

Dear Sir: —

The third grade would be greatly pleased if we could have a table for our room. It would be so nice to have one for our manual training work and for books we sometimes need to use. The boys and girls who have good lessons can do some special work at this table.

Your little friend.

The children of a sixth grade sent the following letter to the city comptroller: —

Dear Sir: —

We wish to take up some original problems that deal with the city's expenditures. We have found that there are some things which we shall have to have some information about and we thought you would be glad to help us. We have the appropriations for 1910 and the monthly report for September and have been greatly interested in talking about them but there are some things we do not quite understand.

[The letter then speaks of the city debt, inquiring how it is met, the ability to borrow, the interest paid, and so on, and inquires what a department does if it needs more money than has been appropriated for its work. It also inquires as

to the salaries of the police and as to the status of the funds set aside for sidewalks, crossings, streets, and alleys.]

We wish you would come out and talk to us, but if it is more convenient for you to write than to come, please do that.

Very truly yours.

The general motive underlying these letters overlaps somewhat the motive of sharing. This will be seen by a comparison of the above results with those shown on pages 88–91. The concrete situations out of which this language work grew are but typical of scores of situations which must be met in every school.

While the need to communicate will usually result in a letter on the part of children, compositions designed to give information will often assume the more formal aspect of a theme. The same thing will often be true of a composition written to delight or please. Written compositions for the purpose of extending thanks, responding to a courtesy, or offering a courtesy usually will take the form of a letter.

Second, letters of thanks and responses to courtesies extended which the children found it desirable to write. Some of these, it will be observed, are in response to what resulted from the requests contained in the letters as printed above.

The following note was sent to the teacher who talked to the class about "Starved Rock": —

Dear Miss B: —

We wish to express our appreciation for the helpful instruction you gave us Friday in the talk on "Starved Rock." We also appreciate the fact that you took the time from your own pupils and gave it to us.

Your friend.

This note was sent to the member of the Board of Education who had charge of improving the school

ground, about which the children sent the superintendent a note: —

My dear Mrs. H.: —

How glad we are that you sent the gravel to scatter over our playground. It was very kind of you. On rainy days we could not use the giant strides, or swings, or play any games because it was so muddy. Now since we have the gravel we can play even after a rain. We would be glad to have you visit our school again.

Yours truly.

This note was written to the superintendent after the cabinet requested was supplied: —

Dear Sir: —

We thank you very, very much for asking the Board of Education for the cabinet you sent out to us Tuesday evening. We did not expect it so soon. We are all proud of it. We are sure it will be quite a help to us. Will you thank your Board for us, please.

Yours very truly.

This note was sent to the superintendent after the table asked for was supplied: —

Dear Sir: —

We cannot thank you enough for that table. It is the most useful thing we have. The next manual training day I do not think we will be at all crowded.

Thanking you very much for sending the table, I remain,

Your friend.

This note was sent to the Board of Education after the planting of a privet hedge: —

Dear Sirs: —

I think you have accommodated us greatly by having this beautiful privet hedge put around our school grounds. It greatly improves the looks of the yard.

Very truly yours.

The following note was sent to the high-school orches-

tra and glee clubs by the seventh-grade children of a school, this grade writing for the entire school: —

Dear Friends: —

We, the seventh grade of our school, are very grateful to you for helping us spend such a pleasant hour last Friday afternoon.

It was indeed very thoughtful and kind of you. Your fine playing and singing proved how carefully and faithfully Miss Hall has taught you.

When we get to high school we will endeavor to climb as high as you have in music.

Yours sincerely.

After the city comptroller had responded to the request printed above, the following note was sent: —

Dear Sir: —

We thank you very much for taking the time yesterday to come out and talk to us. Since it is almost time for your October report we know you are very busy. We gained a great deal of valuable information from your talk and expect to start on our original problems soon.

Yours truly.

One of the schools in a city system organized a plan of self-government and sent the superintendent of schools a letter setting forth carefully the plan of organization and their ideals concerning it. He considered it such a good piece of work that he sent it to the state superintendent of public instruction, who was so pleased with it that he printed it in the monthly *Educational Press Bulletin.* After the children learned that he had printed it, they formulated this letter and sent it to him: —

Dear Sir: —

We wish to thank you for thinking so much of our organization letter as to publish it. We all think it was very nice of you.

We received it this morning just as the captains were giving

their weekly reports. You may be sure it came in pretty handy.

We will thank you very much if you will send us a few of the *Educational Press Bulletins*, as some of the children would like to have one to remember Helena by. Helena is the child who wrote the letter which you printed.

Very truly yours.

Third, letters extending courtesy.

The following note was sent to all of the supervisors of the schools: —

We most cordially invite you to be present at Pugh school at three o'clock, Wednesday, December 21st. The boys will exhibit their manual training work and the girls will exhibit their Christmas sewing.

Yours truly.

Here is another note regarding the same sort of thing which was sent to the superintendent from another school: —

Dear Sir: —

We are going to have a small exhibit next Wednesday at three o'clock. The boys of the sixth and seventh grades will show some of their manual training work. The girls will show their domestic art work which they have been making for Christmas.

We would like it very much if you would come and see these things. Miss Murphy, the sewing teacher, will be here and we expect some of the other supervisors. I am sure you will be interested in these things, especially the things the boys have made, as you were once a boy, too.

Hoping to see you, I am

Most sincerely.

The following is an invitation sent to all their parents by the children of a sixth grade: —

You are cordially invited by the sixth grade of our school, to be present at the Thanksgiving exercises, November 23rd, 1910, 2 P.M., room 7.

The children of one of the schools wrote a note similar to this one to each mother sending children to school: —

Dear Mother: —

You are cordially invited to come at 2 o'clock, Friday afternoon, to Room 12. We are going to play the story of the *Miller, His Son and the Donkey.*

At three o'clock there is to be a business meeting in Miss Hamilton's room.

Your son,

JOHN.

The children of a fourth grade sent this note to the members of the Board of Education: —

Dear Friends: —

The children of the fourth grade wish to thank you very much for giving us Monday, after New Year's, for vacation. I am sure we shall enjoy it very much. We wish each of you a Merry Christmas and a Happy New Year.

Very truly yours.

The following note was sent to the superintendent: —

Dear Sir: —

You saw our second day's work on *The Lion and the Mouse.* We are sending you the copy of the play. As we wrote it suitable for the third grade we invited them to play it for us. We enclose our letter to them and their reply. We hope you may be present when the play is given.

Yours sincerely.

Fourth, letters written to please or delight some one.

This note was sent with some flowers to a woman who was ill: —

We send these flowers to make you happy. We hope you will enjoy them. We picked them in our school yard.

Yours truly.

This note, together with some roses, was sent to an elderly man in the community whom the children had come to know through one or two visits he had made to the school to speak to them: —

Dear Friend: —

We wish to congratulate you upon reaching your eighty-seventh milestone and send these gifts of nature to show our love for you. We wish you many more happy birthdays.

Your friends.

The superintendent received this note just a day or two before the schools closed for Christmas: —

The teacher and pupils wish you a Merry Christmas and a Happy New Year. We are very grateful to you for your kindness during the year. We have worked hard and tried not to be troublesome this semester. Our New Year's Resolution is "Strive to do better than last year."

Yours sincerely.

Using the instinct of sharing. In the practical work of the school the teacher finds that the children share, help, and entertain — first, one another; second, the children of another grade; third, the teachers and children of the entire school; fourth, a mature audience made up of parents and others who may be interested.

This source of language material is ever present. Indeed, the necessity of writing from this standpoint forces itself upon both teacher and children if the school is conducted at all as a social organization and with a consciousness of the natural social relationships. Of course, in the school where language work merely means so many pages per term in a textbook, the language problems arising in the social relationships of the school would wholly escape the attention of the teacher. The following section indicates how the opportunities for such writing arise and quotes brief extracts showing the concrete results obtained.

It is natural for children to share with and to aid and entertain one another. When they return to school after the summer vacation, they bring a variety of experiences which are of intense interest to one another.

What is more natural than that they should wish to tell of these experiences either in oral or in written compositions?

Again, after they have enjoyed the festivities of the Christmas vacation, what is more natural than that they should wish to share their varying experiences with their friends and playmates in school? Again, during the course of the year, new pupils come into the school from other schools or even from other cities. What is more natural than that the children should wish to profit by the new point of view and by the different experiences which these children bring? These situations are typical of the almost endless number of occasions which arise in every school and which should constitute a natural basis for the most enthusiastic type of composing which can take place in the school.

In the second place, the children's interests are not confined to their associates in their own grade. They naturally wish to share certain of their experiences with the children of other grades.

At the opening of the school year, the sixth-grade children in a certain school wrote some very interesting compositions growing out of their vacation experiences, each child taking the event which had given him the greatest pleasure during the vacation. After these experiences had been shared with the rest of the class, the plan was conceived of rewriting them in language adapted to the second grade. Accordingly this was done, and a booklet made of the combined compositions was presented to the younger children for reading. The entire booklet was most interesting, such topics as these being covered — "Our Ball Game," "Visiting in the Country," "Nursing the Piggie," "Going Fishing in the Country," "Out Camping," "The Balloons." The fol-

lowing quotations are typical of the stories sent to the second-grade children: —

Our Ball Game

I was out in the country this summer. We had a ball game. I played right field, and caught two flies and missed two. My cousin was captain and pitcher, and his brother caught. My brother played center field. I made one home run, two three base hits, and two two-base hits. In all the game, I made four runs. Some of the men on the other side were married. None of the boys on our side were over sixteen years old. We won the game with a score of twenty-two to eighteen. We were very glad we had won.

Visiting in the Country

One warm day in summer I went to visit my aunt in the country. The first day I was there, my cousin and I went all over the farm.

We first went to see the stock, and O! what do you think we saw? We saw cows, and pigs, and the dearest little woolly sheep! . . .

The Balloons

I went to my Sunday School Picnic. They sent up two balloons. One got caught in a tree and the balloon burned up. The other sailed south of the park away over the hills as far as my eyes could see. When I got home I was tired and happy.

One of the most extensive pieces of work the pupils of a grade may undertake with the pupils of another grade in mind is a dramatization. The pupils of a sixth grade dramatized *The Lion and the Mouse*, adapting it for presentation by those of a third grade. It is impossible to reproduce this dramatization, of course, but the basis afforded for composition work was very definite and the results secured were most gratifying. In arranging for the dramatization, it was necessary for the children of the sixth grade who wrote it to address those in the third

grade who were to play it. After the dramatization had been presented, the sixth-grade children wrote a letter of appreciation and the third-grade pupils wrote a letter in response. Out of this wish to help one another, therefore, grew an extended amount of interesting writing.

Following the visit of a sixth-grade class to a sorghum mill situated near the city, the children felt that they had had an experience which would be valuable to other children. Therefore they wrote up their experience with the idea of sending their account to the other fifth and sixth grades in the city. The following is a typical account of their visit to the sorghum mill: —

> The growing cane is much like corn, but is a darker green. It is cut like corn also. After it is cut, it is stripped of its leaves and then put between two iron rollers which are turned by a traction engine. Under these rollers is a small, bucket-shaped trough, from which runs a pipe. The sap drops into this trough when pressed from the cane, then passes through the pipe into a tank. The crushed cane is thrown, by a moving belt, into a pile like a straw stack. The sap, when first pressed from the cane, is a vile looking green color. From this tank is another pipe going to the boiling vats. At the end of this pipe is a hydrant so they can shut it off when enough sap is in the vats. These are arranged so that the sap passes from one to another and is boiled thoroughly for two hours.

Using the motive of entertaining. Not only may the children of a grade share their experiences with one another and with the children of another grade, but all of the children of the school may coöperate in the development of exercises interesting and profitable to the entire school. These programs are necessary if the school has the practice of holding assembly exercises[1] at stated intervals or on special days such as Discovery Day,

[1] See also the discussion of the school assembly, in chapter XI.

Thanksgiving, Christmas, May Day, and Memorial Day. The development of the regular assembly programs and of these special day exercises effectively motivates all of the work done in preparation, whether it be composition, dramatization, reading, or music. For example, the sixth grade of one school found a need for two programs during the year. Naturally, much preparatory work was involved, and the desire of having a successful performance motivated many lessons that otherwise would have been uninspiring tasks. The school developed a New Year's assembly program, this grade having charge of the principal features of the assembly exercises for the entire school at this particular time. The different numbers consisted of appropriate readings, songs, and compositions which had been developed in their regular work.

Finally, the greatest stimulus of all is that which the children feel in the preparation of a program for the entertainment of an audience of mature people in a rather formal afternoon or evening program.

Early in the fall term a fifth-grade class in a school decided to discharge their responsibility for providing a program for one of the meetings of the mothers' club by developing a play. They decided to set forth in dramatic form *How Arthur Became King*. The material needed for this dramatization they knew would be developed in their history work. They also knew that one of the sets of supplementary readers which would come to them would provide the necessary concrete material for their dramatization. The development of the play, therefore, became the main motive around which the history work was organized. The execution of this large problem required, of course, the mastery of a series of historical stories and the drawing of illustrations. Not

only was the finished product shared with the mothers' club at their meeting, but the other fifth grades were invited to enjoy the results of these labors.

It is unnecessary to present here the detailed finished results in composition which are developed in working from this standpoint. It is evident, however, that there are many types of work which naturally develop if the interest of the children in sharing, helping, and entertaining is allowed to operate normally.

The motive of preservation. The fact that a child's writing may finally be preserved in a more or less permanent form undoubtedly motivates wonderfully his efforts to write. Children need to preserve some of their work in written form for reference. This is true of outlines and notebooks in English, history, geography, or nature-study. Most children are interested in preserving some of their best compositions that they may note their own improvement.

The motive of preservation is appealed to in a double sense when some interesting tradition or historic event which has never been written up for publication is discovered by the children. The hope of writing something of sufficient merit to be selected for publication in a newspaper or in a school paper stimulates children to uncommon efforts in writing. In fact, the hope of writing something worthy of publication is one of the strongest motives for good writing that may be provided, for publication combines preservation, sharing, and sometimes even commercial gain. The results in good composition work which may be secured under the stimulus of writing for publication are graphically illustrated in any school paper for which the students supply the copy. A school wishing to stimulate good English work can undertake no more valuable enterprise than the

publication, and if possible the printing, of a school paper. The teachers of the elementary schools in Decatur, Illinois, and in Topeka, Kansas, found the children were eager to write when one of the daily newspapers gave a half page per week for the publication of the "school paper" from some school. The fact that the best writing would be recognized and preserved in printed form motivated the gathering of items and the writing of incidents suitable for use in the school paper.[1]

Of course, in the upper grades and in the high school the exceptional child is occasionally found whose English work is sufficiently motivated by his mere desire to speak and write correct, forceful English. He avails himself of every opportunity to speak or write that he may improve, and for the same reason he uses his language book and other technical sources of information that he may become a master in the use of English. The results he produces, whether writing merely to improve his ability or under the stimulus of some other immediate motive, are always good. It would be a serious mistake, however, to hold up to all children as an ideal to be attained such a style and such detailed finish as the specimen below illustrates. The effort should be rather to secure simple, direct, clear, interesting, forceful English.

The following quotation from a three-page composition, written just for the joy of writing, by a ten-year-old girl, is typical of the results secured from gifted children when they write merely for the joy of it and for the improvement writing brings: —

[1] See chap. XI for a more extended discussion of the values of such writing.

In the Dale of Flowers

It was just dawn. I was wandering down a path leading to the Dale of Flowers. The sun was sending forth golden rays as messengers to bring tidings that a new day had begun. Fluffy pink and gold clouds drew themselves out of the dense blue of the sky to greet the coming sun. Flaming purple and red streaks stretched across the sky.

The Dale of Flowers was as lovely as its name. An exuberant growth of trees, vines and shrubs surrounded it. Inside the ground was covered with grass, making a green velvet carpet. Here and there clumps of flowers broke the smooth sheet of green. . . .

The next time my glance was turned towards the East I saw that the sun was up, making its way through the roof of tangled branches, and throwing little bunches of golden sunbeams through the mass of leaves. It was now day. The Dale of Flowers looked like, nay far better, than a king's palace. The door was not a hard door of amber, but a door of soft, living vines, Nature's handiwork. The wall was not a wall of marble, but was one of trees, bushes, and vines.

Although the results which can be secured from the rank and file will be far inferior to the results secured from those who are gifted in writing English, every child in the upper grades should write occasionally, at least, merely in the interest of producing as correct and interesting a bit of English as he can.

Using the text. Stress has been laid on language or composition teaching which arises out of meeting actual life-problems. However, the use of this method does not imply that the language textbook is to be discarded. On the contrary, if the best results are to be secured, the text must be faithfully used as a source of aid and information in enabling the pupils to meet technical difficulties which appear as they try to talk or write. When questions of punctuation, sentence-structure, or grammatical accuracy arise, economic procedure calls for the use of the text which has been

adopted as the authority and guide. When the text is thus employed as a convenient tool for helping in the solution of actual problems which the children have met, its use is definitely motivated. It matters not how difficult the lessons may be, their mastery does not entail drudgery such as we find in the preparation of a lesson merely because it has been assigned by the teacher. Instead, the labor involved is willingly undertaken, because it will contribute to the doing of a piece of work of great importance to the student.

Every experienced teacher appreciates, however, that the mere motivation of the study of the lessons in the text will not insure their mastery and the habitual use of correct English in accordance with the lessons studied. This unvarying use of correct English comes as the result of making correct usage habitual through drill and extended usage. Drill exercises [1] occupy so prominent a place in establishing correct usage that their adequate motivation becomes a separate problem.

In the preceding pages the motivation of speaking and writing has been discussed and illustrated; but those motives which are adequate to move a child to speak and write with great freedom and enthusiasm will hardly be sufficient to motivate thoroughly the drill exercises which are essential in establishing correct usage. Accordingly, the skillful teacher develops a large number of games, both oral and written, often involving competition. The agreement of subject and predicate in number, the correct use of all common irregular verbs and of all usual idiomatic expressions, and so on, must be established through such drill exercises as may be provided in games involving quick, accurate responses, in supplying the correct language in exercises where omissions

[1] See Charters's *Teaching the Common Branches*, p. 68.

occur, or in quickly giving correct responses to questions or problems rapidly stated by the teacher.

The value of formal grammar. Since the children's needs in talking and writing determine the technical matter in language and composition which shall be taught, all facts and definitions which are not essential in speaking and writing correctly will be omitted. Modern practice is gradually recognizing that the extended study of English grammar does not enable one to use better English or to interpret literature better.[1] Since it does not help to solve such practical life-problems as arise in the experience of children in the elementary schools, its study cannot be motivated, so it will be omitted by the method of attack here presented. This is as it should be. If the text in use contains dead, obsolete matter not needed by children in talking and writing, why teach such matter? [2] Teachers who use modern language texts containing only functional matter and who motivate all of their language and composition

[1] For an extended statistical investigation pertaining to this topic, see Hoyt's "The Place of Grammar in the Elementary Schools," *Teachers College Record* (November, 1906).

Briggs has also demonstrated that the teaching of technical grammar is not justifiable from the standpoint of disciplining the mind. See Briggs's "Formal English Grammar as a Discipline," *Teachers College Record* (September, 1913).

[2] The application of this standard eliminates the teaching in the elementary schools of a large number of technical distinctions which it has been common to make in the grammar course in the upper grades. Among these may be cited the following by way of illustration: Classifying nouns into abstract and concrete, distinguishing adjectives as limiting, descriptive, distinguishing the various ideas expressed by adverbial expressions as time, place, manner, classifying abstract nouns into those naming an action and into those naming a quality or condition. All of these distinctions may be made with accuracy even by elementary school children and all of them are true distinctions; but they are of no significance to children. Since such distinctions render no service, their mastery should not be required.

work, find from repeated checkings of the work thus covered that every technical aspect of the work assigned by the course of study is always covered and that much matter assigned to preceding grades is always thoroughly reviewed through using it in vital connections.

To illustrate, a certain sixth-grade teacher reported that the language work assigned to her grade during a certain semester was all thoroughly taught through doing the following thirty-eight pieces of motivated work: —

(1) A book of stories about vacation experiences was made for the second grade to read; (2) letter written inviting the third grade to play a dramatization of *The Lion and the Mouse* which the sixth grade wrote; (3) letter to the superintendent of schools inviting him to see the dramatization and enclosing a copy of the dramatization; (4) letter of thanks and appreciation to the third grade after they presented the dramatization; (5) letters to parents inviting them to witness a repetition of the dramatization; (6) letter to the superintendent of schools asking permission to visit a sorghum mill; (7) letter to the owner of the mill asking his permission to inspect the mill and to learn the process of making sorghum, and also one to citizens owning automobiles asking that they take them to the mill; (8) letters of thanks to the superintendent of schools, the owner of the mill, and the owners of the automobiles after the visit; (9) a written account of their experiences at the mill to lend to other grades which did not visit the mill; (10) letters inviting parents to attend the school's Thanksgiving exercises and enclosing program; (11) letter of request and later one of thanks to the principal of another school for the loan of a picture needed in a colonial life scene in the Thanksgiving program; (12) letters of request and later of thanks to the kindergarten teacher for the loan of her small chairs, to a citizen for the loan of his curtain-stretchers, and to the teacher of another grade for the loan of some Indian shields, all for use in presenting the Thanksgiving program; (13) letters of thanks to the first grade for the privilege of witnessing their dramatization of parts of *Hiawatha;* (14) letters at Thanksgiving-time such as the early colonists might have written to friends

in Europe; (15) invitations to all in the building and to all supervisory officers of the schools to witness their Discovery-Day exercises of October 12; (16) making programs for the Discovery-Day exercises; (17) writing play for the Discovery-Day program; (18) letter of request and later one of thanks to the seventh grade for the loan of costumes needed in presenting the Discovery-Day program; (19) similar letter to a citizen for the loan of Indian relics; (20) letter of invitation and later one of thanks to the second-grade teacher asking her to tell of her travels in connection with certain geography work; (21) letter of request and later one of thanks by girls to a local shoe dealer for shoe boxes in which to keep their sewing; (22) letter of request and later one of thanks to an old citizen for information about early pioneer life in Kentucky, needed in connection with history work; (23) letter of greeting accompanied by flowers to this same citizen on his eighty-seventh birthday; (24) working out story of the life of Wagner to enable them better to understand some of his musical productions; (25) letters of reply to children in Stratford, England. (Each child gave particular attention to some one thing in or about his town or State that no other child was to write about: gathering the information necessitated visits to factories, post-office, waterworks, public library, Y.M.C.A., Y.W.C.A., depots, coal-shaft, etc., also letters of inquiry to newspapers, Chamber of Commerce, factories); (26) letter of sympathy, accompanied by a basket of fruit, to a sick schoolmate; (27) letter of thanks to a citizen who brought his Victrola to the school at Christmas-time, playing selections appropriate to the Christmas season too difficult for the pupils to sing; (28) Christmas greetings to teachers and supervisory officers of schools; (29) preparing a February booklet containing papers and programs pertaining to noted men born in February; (30) compiling booklet recording legends of St. Patrick's Day; (31) replying to letters from Indian children; (32) letter of sympathy to a classmate at the time of his grandfather's death; (33) compiling the history of the school this grade attended, it being the oldest school in the city; (34) compiling booklet of Easter legends; (35) writing essays in competition for a prize offered by a citizen on "The Attraction and Protection of Song Birds"; (36) girls answering an advertisement in local paper for "Girl Wanted"; (37) boys answering an

advertisement in local paper for " Boy Wanted "; (38) letter of request and later one of thanks to the superintendent of schools in connection with a school picnic at the close of the year.

A careful examination of the experience of several teachers in employing the method illustrated by the work of the sixth-grade teacher shows that genuine need appears for employing not only all of the material assigned by the course of study and the pages of the language text, but much other significant and valuable material. This enlarged and enriched procedure is inevitable, of course, when the problems undertaken are real life-problems to the participants.

CHAPTER VII

THE MOTIVATION OF HISTORY

Re-living history. Enough of the history work can be organized around thoroughly motivated situations to create a keen interest in the subject and to secure joyful effort on the part of children in the mastery of as much of history as is necessary to secure the purposes of the subject in the public-school curriculum. History deals with human activity, with deeds, with events. These can be reënacted and re-lived. The first and highest type of motivated history work is this actual doing of things in an objective way. Some of the things which were actually done along this line were reported in 1911 by a committee of the National Education Association, as follows: modeling cave, tools, etc., used by the early cave man; learning the structure of a mediæval castle in detail so as to rebuild it in clay; working on the period of discovery and exploration to acquire the knowledge necessary to participate in a conference of the different nations which settled America; writing imaginary diaries of great men; making supposed speeches of statesmen; representing a constituency in the Legislature or Congress; preparing to debate some questions which were before Congress for settlement; dramatizing scenes, stories, and epochs; arranging a pageant.

The reports indicate that all of these undertakings were conceived and carried out as the pupils' own. With a skillful teacher to guide in the collection of data and to insure the proper historic atmosphere, the pupil who

helps in remodeling a cave or building a castle must get into a life and civilization quite limited and hampered in comparison with the present. He cannot participate in a conference of nations, write a Revolutionary diary, or make a speech in Congress without coming to a vivid realization of the thoughts and aspirations of the patriotic Americans who made our glorious history. For this purpose the drama and pageant are equally valuable.

The solution of a modern problem. The second type of motivated work and that most nearly approaching the first in strength and importance is the enlistment of children in the solution of a problem developed out of their own interests. For example: To what extent should the United States restrict immigration? Should the United States establish a protectorate over Mexico if necessary in order to restore peace and prosperity there? All true history is a problem.

Other motives. A third type of motive which is important, although not so vital, is the desire of the pupil to improve any opportunity to contribute to the benefit of other members of the class. A pupil may so contribute by making a special report, by getting additional information from the library, by bringing something of historic interest from home, or by assisting a member of the class who has difficulty with his work.

A further motive that should not be neglected is the child's interest in stories of heroism and adventure, giving opportunity to use the historic novel, or romances clustering about a historic event or situation.

An interest in people is a fifth usable motive. Biography appeals to children in all grades, but is especially valuable in the lower grades where it is not possible to develop an interest in abstract problems. Children's in-

terest in people gives the opportunity to impart a great amount of historical information and also develops interest in further knowledge.

The first two types of motivated work are most fully illustrated in the following pages. The others are simpler, more easily used, and do not carry such high values.

The Constitutional Convention in class. The work with eighth-grade pupils on the United States Constitution, as taught during a period of two or three years in a certain school, furnishes a good illustration of motivation in history work.[1] It had been the custom to spend six weeks upon the study of the United States Constitution, at the beginning of the National Period. The pupils considered this task exceedingly difficult and uninteresting, and the teacher had real trouble in getting good work done. Because of the difficulty of the situation the teacher had considered the advisability of omitting the work on the Constitution. However, it appeared to be of real value, since many of the pupils do not reach the American history work in the fourth year of high school, where civics is taught. With this thought in mind, the suggestion was made that the teacher make the work more interesting by organizing the grade into a Constitutional Convention, indicating to each pupil the character that he was to represent. The teacher was skeptical both as to the feasibility of the plan and as to her ability to carry it out. Accordingly, another term passed in which the work was done in the old way with the usual difficulty. When the time came for this work the next term, the suggestion of a Constitutional Convention was repeated to the teacher. She still hesitated to undertake it, but finally agreed, and asked that some

[1] Reported in part in the *Elementary School Teacher*, September, 1912.

assistance be given her in organizing and starting the work. This was a normal situation, with the teacher in the proper frame of mind, although a little skeptical as to results. The superintendent and teacher planned the work together very carefully. A sufficient number (six copies) of Madison's *Journal of the Constitutional Convention* were secured, to enable the class of thirty-five pupils to get along fairly well. Madison's *Journal* had been referred to on previous occasions, but being very difficult to handle no use had been made of it.

The Constitutional Convention was organized by electing George Washington (the teacher acting in this capacity) as president, and by electing some member (not necessarily Madison) as secretary. A committee was appointed to draw up rules to govern the deliberations and discussions. This committee was required to report at the second session. After the adoption of the rules, Mr. Randolph was permitted to open the main discussion by presenting the Virginia plan. The work from this point on was necessarily very greatly simplified. The teacher experienced no difficulty in getting a hearty response from the pupils. In fact, the next meeting of the Convention became the chief topic for conversation among the pupils. A particular topic was assigned for the next meeting, say, for illustration, *the length of the term for which the President shall serve.* A pupil's preparation for the next session consisted in finding out his character's view upon this subject. It was the duty of the pupil representing Mr. Pinckney to be prepared to present Mr. Pinckney's views to the Convention. The pupil representing Mr. Sherman was to be prepared to present Mr. Sherman's views, and so on throughout the list. It was the further duty of each pupil to know whether the man he represented introduced any resolu-

tions having reference to the length of the term of the Presidency. When the next session of the Convention was called (a week later), each pupil was prepared to present his views with reference to the topic assigned, to enter into the discussions, to make motions, and to vote. In fact, he was prepared to be a real member of the Convention and to have a part in the making of the United States Constitution.

After the first topic had been worked over in this way there was no longer any doubt as to the success of the plan. The teacher was as enthusiastic as the pupils. She was a thoroughly competent teacher and this contributed much to the success of the plan. Since the plan was adopted there have been several Constitutional Conventions. The six copies of Madison's *Journal* which were in the public library have been completely worn out and the school has since bought additional copies.

While this special work is being carried on and the session of the Convention is being held about once a week, the other days of the week are given to a systematic study of the Constitution — the reasons for calling the Constitutional Convention, the defects of the Articles of Confederation, the great compromises of the Constitution, the organization of the different phases of the Government, the opposition to the Constitution and its final adoption by the necessary number of States, and finally, the election of the first President and the organization of the new Government under the Constitution. But it must be said that this work is conducted in an entirely different spirit from that formerly displayed. The pupils seem to assume more or less of a proprietary interest in the United States Constitution. They understand just how difficult a matter it was to make the Con-

stitution, the differences of view which prevailed, the compromises, the divisions, etc., which took place during the process of making the Constitution and bringing it into final form.

Topics which are studied in sessions of the Constitutional Convention vary, of course, from time to time. A session is usually held upon the *powers of Congress* in order to call special attention to the elastic clause of the Constitution (last paragraph, art. 1, sec. 8) and to prepare for the use of this clause by Hamilton in his conflict with Jefferson during the organization of the Government. A session is devoted to the *regulation of commerce* in order to emphasize the compromises based upon this important subject. Another topic which has been found very helpful and which lends itself readily to treatment in the Convention, is the *basis for representation in the lower House.* Topics in connection with the Executive, in addition to the one mentioned above, which have been treated from time to time are: (1) A single, dual, or triple Executive; (2) powers of the Executive; (3) manner of electing the Executive; (4) eligibility for reëlection.

The edition of Madison's *Journal* used for this work is indexed by subjects and by persons. After the pupil becomes accustomed to the general plan of the *Journal* and learns how to use the index, he has no difficulty in ascertaining his view upon any subject by looking under his assumed name in the index, and following through the points there indicated. He easily sees whether or not he has said anything upon the topic for discussion. The understanding is that in case he has said nothing, he shall turn to the topic and read the views of one or two persons who do speak. This gives him the general line of argument. By keeping in mind his attitude in general,

it is possible for him to shape his views and say a word, even though he does not actually discuss the topic as indicated by the *Journal*. For instance, Alexander Hamilton, when present, was always conservative and doubted the advisability of conferring much power upon the people; while Wilson, of Pennsylvania, was thoroughly democratic, trusted the people, and sought at all times to give the people an opportunity to participate fully in the Government. Wilson even favored the election of the President by direct vote. With this knowledge of the general attitude of Hamilton and Wilson, the pupils representing them would have little difficulty in properly presenting their attitude on almost any subject. And so it is with others, although few are so easily represented as are Hamilton and Wilson, since few are so consistent throughout.

In handling the Convention the teacher places all of the responsibility upon the pupils and so apparently has little to do in organizing or furthering the work. As a matter of fact, however, the teacher's plans, especially when the work is being done for the first time, must be very definite and may require considerable extra time. The following gives the teacher's outline in preparation for the discussion of *the length of the term of the Executive.*

Length of term of the Executive

Terms of years left blank in Virginia plan (pp. 62 and 69).
Seven years agreed to in Committee of the Whole, discussion suggesting from two to eight years (p. 91).
Wilson moved for three years (p. 88).
Pinckney moved for seven years (p. 88).
Sherman for three years, and against rotation (p. 88).
Mason for seven years and for prohibiting reëligibility (p. 88).
Bedford against long term. Favored three years and eligibility for three terms (p. 89).

Ineligible after seven years agreed to by vote, seven to two, Pennsylvania divided.
Final form of report of Committee of Whole on Virginia plan, seven years (p. 161).
New Jersey plan left years blank (p. 165).
Hamilton's plan favored life term of Executive (p. 183), or "during good behavior" (p. 185).
Ninth resolution of Committee of Whole on Executive reported favoring seven years (p. 365).
Dr. McClurg moved "during good behavior" (p. 369).
Seconded by Gouverneur Morris (p. 370).
Opposed by Sherman, Mason (pp. 370–72).
Six years agreed upon (p. 390).
Mr. Williamson, ten or twelve years (p. 420).
Eleven, fifteen, twenty, and eight years suggested (p. 422).
Seven years agreed upon (p. 437).
Seven years in first draft of Constitution (p. 457).
Four years *first mentioned* in report of Committee of Eleven, Mr. Brearly, chairman; electors also proposed here (p. 654).
Mr. Rutledge moved to change to seven years; failed (p. 664).
Four years in first complete draft (p. 707), and in final form (p. 756).

It will be noticed that with this outline before her the teacher is prepared to say to Mr. Pinckney, in case Mr. Pinckney asks a question, "You will find your views explained on page 88." To Mr. Bedford she can say, "Your views as to the length of term, as also for re-eligibility, will be found on page 89." She can refer Mr. Hamilton to pages 183 and 185. Those not having a part in the discussion may be referred to the first plan on page 91, the plan as given in the first report of the Committee of the Whole on page 161, the further consideration of the report of the Committee of the Whole on the Executive on page 365, the agreement on the modification of the report of the Committee of the Whole on page 390, the unsettled opinion as to the

length of the term as shown on page 422, or the first mention of the present term on page 654.

This illustration of motivated work on the Constitutional Convention has been worked out fully enough to enable any teacher to take the idea and put it into practice. It is the belief of the authors that our formal textbook work persists, because teachers are not helped to substitute something better and more life-giving. One of the aims of the present work is to aid such substitution. This work on the Constitutional Convention uses the dramatic instinct, and makes the pupil an actor of history. It gives work which appeals to his best efforts. It furnishes interest and motive.

Dramatizing historic events. History frequently fails of its purpose because it fails to live for the pupil. It is too often nothing more than verbal memory work. A striking illustration of this fact is furnished by a sixteen-year-old girl who once committed and recited to her teacher the discovery of America by Cabot, without the least conception of the objective significance of what she was talking about. She had been permitted to recite in that way for so long that the most drastic measures were required to awaken her.

History must live, or it fails of its purpose. Dramatic treatment gives life. This was demonstrated by a seventh-grade class which was plodding along with the situation in England and Holland that finally caused the Pilgrims to move to this country. It was a slow class and the teacher was thoroughly disheartened.

"Don't blame the class," the superintendent said; "do something."

The teacher was ready to do anything that promised relief. The next day at recitation time English officers entered with warrants for the arrest of twelve members

of the class for not attending the services of the Established Church on the previous Sabbath. They were shackled and imprisoned in the principal's office. While in prison, they decided to leave for Holland in order to have religious liberty.

This was a new experience. The class was thoroughly aroused. The next day the class was discussing the English in Holland, when they were suddenly interrupted by some of the other children who ran into the room in their play. To the amazement of the Pilgrims all of the conversation was in a foreign language, this part being played by sixth-grade pupils who were studying German. A meeting was called and it was decided that they should go to America in order that their children might grow up with English habits, language, and ideals, rather than with those of a foreign country.

By this time the class had entered fully into the spirit of the work. They were beginning to like history. The teacher realized a difference. From that time on the pupils were looking for opportunities to dramatize sections of the work. The teacher held back enough to make them consider it a special favor, but continued to use this plan of motivating and enriching the work.

The spirit soon reached the high school. The typical high-school teacher finds difficulty in getting out of the textbook into life. But our high schools will never perform their greatest service so long as they continue to treat high-school pupils as so many empty vessels to be mechanically filled with facts gathered from mechanically assigned pages. The high-school teacher must learn a better pedagogy. In this particular high school the recitation work has been modified very slowly, but some real problems have been developed and the textbook has become less of an end, more of a means. In the

line of pageantry, however, the work has developed quite successfully. A Thanksgiving program in the form of a pageant was presented by the history department as a night entertainment in the high-school auditorium. The pupils were costumed, and the effort was made to present the historical situations in their true spirit. The following program gives a brief summary of this: —

THANKSGIVING PAGEANT

ACT I

Manse of Elder Brewster, Scrooby, England.

Elder Brewster has asked several to remain after the morning services to discuss the religious situation.

ACT II

Holland. Home of Mr. and Mrs. Winslow.

Scene I. Mr. and Mrs. Winslow decide to call in some friends to discuss the wisdom of leaving Holland.

Scene II. Same place. Pilgrims decide to emigrate to America.

Scene III. Shore, Delftshaven. Pastor Robinson gives his blessing to the departing Pilgrims.

Music. Orchestra.

ACT III

On Mayflower, nearing Cape Cod. The cabin of the vessel. Signing of the compact.

Chorus. Landing of Pilgrims.

ACT IV

Scenes I and II. Elder Brewster's home in Plymouth. Puritan girls and women discuss the Governor's Thanksgiving holiday. Plans made for the feast.

Music. MacDowell's 1620.

ACT V

Scene I. Indian camp of Chief Massasoit. Squanto brings message from Governor Bradford, inviting Indians to Thanksgiving feast.

Scene II. Governor Bradford and Elder Brewster discuss the feast, and day of Thanksgiving.

Scene III. Day of feast. Elder Brewster's home. Preparations made by the women. Arrival of Indians, also Captain Standish and soldiers.

Characters

Elder and Dame Brewster	Priscilla
Master Chilton	Weston
Master Bradford	Dame Goodman
Deacon and Dame Carver	Mary Chilton
Mr. Wentworth	Councilor Allerton
Mistress Wentworth	Elizabeth Tilley
Josiah and Penelope Winslow	Helen Billington
Pastor John Robinson	Dame Hopkins
James Winslow and	Puritan women
Dutch playmate Hans	Puritan girls
Mistress Brewster	Indians
Mr. and Mrs. Minter	Pilgrims
Desire Minter	Massasoit
Rose Standish	Squanto
John Alden	Quadequina
Doctor Fuller	Captain Standish and soldiers

As Pastor Robinson, on the shore of Delftshaven, pronounced his parting blessing in Scene III, Act II, the entire audience were wonderfully impressed. Many of them began to realize, as never before, the true spirit of the Pilgrims and the forces which brought them to America. The pupils had caught the historic spirit and were re-living it that night for the benefit of parents and friends.

In April, the history department of this high school presented another pageant, *A Greek Evening*, or *An Evening in Mythland.* A Greek theater was arranged in the high-school gymnasium. Invitations were issued to two hundred friends and patrons. The plan was agreed upon and worked out by teachers and pupils. Since only three days were given to practice, a committed and

finished product was not attempted. The pupils, however, were costumed and entered heartily into the spirit of the work. All was life and interest. Greek life in general, and the Trojan War in particular, were lived over again by the pupils. The program and characters are indicated herewith: —

AN EVENING IN MYTHLAND

Friday, April 19, 1912

Connersville High School

PROGRAM

PART ONE

A Pageant of Greek Gods and Heroes

PART TWO

The Trojan War

I. THE PROLOGUE . . . Clio, Muse of History

ACT I

Scene I. The Marriage Feast of Peleus and Thetis.
Scene II. The Decision of Paris.
Scene III. The Assembling of the Chiefs

ACT II

Scene I. The Plague among the Greeks.
Scene II. The Wrath of Achilles.
Scene III. The Stratagem of Odysseus.
Scene IV. The Discovery of the Wooden Horse by the Trojans.
Scene V. Victory for the Greeks and the Forgiveness of Helen.

Characters

Zeus, father of gods
Hera, his wife
Athena, goddess of wisdom and war
Ares, god of war
Poseidon, god of the sea
Artemis, goddess of the chase
Hestia, goddess of the home

Demeter, goddess of grain
Aphrodite, goddess of beauty and love
Apollo, god of manly beauty
Hermes, messenger of the gods
Eris, goddess of discord
Hephæstus, god of fire and forge
Ganymede, cup-bearer of the gods
Peleus, the bridegroom
Thetis, the bride
Paris, Prince of Troy
Menelaus, King of Sparta
Agamemnon, leader of expedition against Troy
Diomedes, Ajax, Patroclus, Nestor, Odysseus, Palamedes, Achilles, Greek warriors
Priam, King of Troy
Laocoön, priest of Trojans
Chryses, priest of Trojans
Calchas, priest of Greeks
Simon, Greek spy
Trojan maidens
Trojan warriors

When history has once been made to live for pupils through dramatic presentation or the pageant, it is difficult to abandon this type of work. The pupils are interested and they demand more, no matter that it requires much more time and energy. It is not surprising, therefore, that in this city where much had already been undertaken, a larger dramatic pageant should have been carried through successfully two years later. It is not surprising that the English teacher agreed to correlate the English with the history and so give additional time to the undertaking. It is not surprising that the work was presented as the principal feature of commencement week, and that the interest and enthusiasm of the entire city were enlisted.

It was the one hundredth anniversary of the founding of the city, and this pageant was arranged as a centennial celebration. The purpose is plain from the following section quoted from the prologue: —

Prologue of the Pageant of Connersville

Should you ask me why this pageant,
Why a theme like this was taken,
I should answer, I should tell you,
That before the old men leave us,

Leave us guessing and unknowing,
How and when the white man came here,
We would like to know the story
Of our town and growing city.

Should you ask, what can we tell you
Other than what has been written?
I should answer, I should tell you,
None have thought it necessary
To write down the facts of history,
And that they who now remember
Every year grow fewer, fewer.
So we beg of you to listen,
As our pageant now progresses,
To this history, this unfolding,
To this story of our city.

Near the shores of the White Water
And on all the land adjoining,
Long before the white man came here
Were great beech and oak trees growing.
Pitched their wigwams, fished and hunted,
Warriors with their plumes and war clubs.
Danced their dances, entered contests
In which fame lay in endurance.
But it could not always be so,
That the Indians freely wandered.
White men further were exploring,
Further into the great forests,
Trading for furs with the Indians.
Thus it happened that John Conner,
With his love for the deep forests
Where no white man yet had entered;
Built he of the logs a cabin
Where he traded with the Indians,
Traded for the furs they brought him.
Still the white men further traveled,
Further into the great forests,
Till at length they reached this region,
Bordering on the great White Water.
Here they settled with their families,

Settled in this fertile valley,
Where in eighteen hundred thirteen
Our beloved town was platted,
Connersville, by name, from Conner.

The following is a brief synopsis of the play which preceded the pageant: —

The first scene in Act I represents an Indian camp, and is typical of the life of the red men before the arrival of civilized people. The feast following a successful hunt is interrupted by the arrival of a war-party with two captives. The captives are forced to run the gauntlet and the scene closes with a frenzied war-dance.

The second scene is at Conner's Trading Post, established on the present site of the city by John Conner in 1808. A typical scene of barter with the Indians is presented, — the exchange of knives, blankets, bright calico, and trinkets for the furs of the Indian trapper.

Act II depicts the home life and conditions of the people of the city in 1846. The first scene is a social, an "apple bee," followed by the dancing of the Virginia reel when the apples are all pared. The second scene portrays the log-cabin school of that day, the schoolmaster, a visit by the trustees, a Friday afternoon program, closing with a spelling-match. The third scene of the act shows a singing-school of the period, with its old-time singing-master training the young folks to sing scales and songs.

Act III shows the city at the time of the Civil War, and the various scenes of the act are reproductions of the actual happenings during April and May of 1861.

The final act is the pageant itself. The development of the city is presented by decades which Father Time reviews and explains to Progress. At the close Progress presents the various industries of the city (thirty in all), and prophesies for the city an even brighter future.

No one who participated in the above project doubts in the least its value to the pupils in furnishing an enterprise thoroughly worth while, in arousing an unusual interest in history, and in giving a sense of historic values impossible in any other way.

The teacher, having most to do with the pageant work in this school system is thoroughly convinced of its value. She says: —

The pupils went to the townspeople for information in regard to the early history of the city and found valuable material which they were able to use. The last scene showing the industrial development of the city was a great factor in developing community interest. Men in the different industries made suggestions and in many cases volunteered to furnish materials.

The social-group method. Miss Clark of the Charlestown, Massachusetts, High School, makes a report in the *School Review* (vol. 17, p. 255) on a good way to teach history. This is an illustration of high-school work that is directly based upon the desire of the pupil to be of account; to have a part in the doing of things; to be given an opportunity to exercise his originality and resourcefulness. It is a thoroughly motivated piece of work, the motive coming largely from the type of organization to begin with, but gradually working out into lines of effort which are developed through the initiative of the students themselves. Miss Clark says:[1] —

After having taught history in the high school for six years I determined to have the courage of my convictions for one year, at least, and to give my pupils a fair chance to take the responsibility of their work and to do it in their own way. Up to this time I had conducted my lessons in the usual way, had planned the lesson beforehand, collected what illustrative material I could, and in the class had asked the questions, explained the difficulties, and carried the burden of the work on my shoulders. The pupils had answered my questions, but rarely asked any, and had had no chance to get the real benefit of being responsible for the continuity and progress of the work, nor to plan, investigate, or discuss it on their own account. I determined that the class should be a social group of

[1] King, *Education for Social Efficiency*, pp. 246–51.

young people and should have an opportunity to do just those things, i.e., to coöperate — to work together — and to give each individual a chance to do *anything* which he *particularly wanted* to do.

It seemed impossible at first to get a chance to try this group work. The conditions in the high school make it difficult. Instead of having the same pupils for five hours each day, we have a different set every hour, and they are with us but forty-five minutes. Some of these classes we see only three times a week, and, as a number of them are preparing for college and normal school, there is not a moment to be wasted. Furthermore, I did not feel warranted in trying any experiment which would unsettle the classes and make them harder to control in other recitations.

In spite of all this, however, I determined to give the social-group work a fair trial. I talked the matter over with the classes, showed them why the lessons we had been having were unsatisfactory, and asked them how they would like to try the experiment of running their history lessons themselves. The novelty of the idea pleased them, and after considerable informal discussion we decided to carry on our relations in the form of business meetings, such as any group of people would have who had come together to accomplish a piece of work. A chairman was appointed from the class and there was something of a sensation when I exchanged chairs with him. He appointed a committee to nominate candidates for president, vice-president, and secretary. These officers were elected by ballot for one month, and their duties were decided upon by the class and written down in a simple constitution. We had an amusing time when they tried to decide what they ought to do with me. I told them I should do just as little as possible in the class, in order that they might have all the time and opportunity there was. They finally decided to call me "the executive officer," with power to exercise full authority if necessity required.

It was surprising to see the change in the whole atmosphere of the recitations which this order of things brought about. The pupils were timid at first, and I trembled for the result, but after a lesson or two they became used to it, and the work went on with far more ease and spirit than I had dared hope it would. Here is a brief sketch of the new kind of recitation: —

(1) The president called the class to order and called the roll.

(2) He asked for the secretary's report, which was corrected by the class and formally accepted.

(3) The president asked if there were any unfinished business. If so, that was taken up first; if not, —

(4) The lesson of the day was called for. Whoever wished to speak arose, addressed the chair, and began to describe the historical events in the lesson. If he made a mistake or omitted anything, another pupil who noticed it arose, and, when recognized by the president, made the corrections he thought necessary. Sometimes these corrections were not correct, or did not go far enough, and several others entered into the discussion. When there were several pupils on the floor at once, the one who was recognized first by the president had the floor and the others had to await their turn. That prevented disorder. This part of the work proved to be of great value. The pupils questioned one another's statements, and when they could not agree, the point was left over as unfinished business until the next day. In the mean time they consulted authorities to be able to prove their points, and they used their reasoning powers to good advantage.

There were all sorts of unexpected, interesting developments as the work went on. Whenever difficulties arose, we solved them together. My opinion was considered of no more importance than theirs. When we did not agree, I urged them to try their way so that they might have confidence in their own judgment if they succeeded, or see its weakness if they failed. Sometimes they elected officers who were not efficient and who bungled matters uncomfortably. The pupils suffered immediately and got some pointed lessons in civil government at first hand.

To tell all this sounds as if it must have taken a great deal of time. As a matter of fact, we soon found that we had time to spare. The time which previously had been taken up by the teacher's questions was all saved, and the pupils could easily recite in half an hour what it had taken them an hour to prepare. The reports of the secretary helped considerably with the review work, and as the class grew more critical of both the history and the English of these reports the secretaries grew more careful, and very often we had reports read with which no fault could be found. The roll-call and report

were sometimes finished in five minutes, the lesson of the day in thirty more, and we found ourselves with ten minutes to spare.

There were various suggestions as to what we had better do with the extra time. One was that they take longer lessons, and this led us into the habit of letting them assign their own lessons, and they almost always took longer ones than I had been in the habit of assigning to them. Another suggestion was that the scholars collect pictures and show them to the class during spare minutes. One boy said he did n't have much luck finding pictures, but he would like to read things in other books and tell them to the class. A girl asked if she might draw some pictures from a book in the library, and another boy asked me to get permission for him to take photographs at the Art Museum of the casts that related to our work. We did all these things and many more, and these suggestions led to the richest development of all in the work of that year. They formed themselves into little volunteer clubs, met at recess and after school, and considered what they could do to contribute things of interest to the lessons. There were drawing clubs, camera clubs, and the club that brought in pictures and newspaper clippings and gave interesting accounts which they had read, called themselves the "Sidelights Club." We used the last half of the last lesson each week for the reports of these clubs. They all did well for beginners, but the work of the drawing clubs was truly remarkable. Never before have I had such beautiful illustrative material. A point worth noting is that some of the finest drawings were made by the poorest talkers.

This teacher further says: —

The discipline of these three classes was the easiest I had ever had, and it became almost unnecessary as the years went on. . . . And what was the teacher's part in this new order of things? She was learning the truth of the statement that "no teacher is equal to the dynamic force of the class before her." Her time and energy were taxed to the utmost to utilize all that the pupils produced, to help to get materials for them, to find and suggest books to be consulted, and to give them credit for the work done.

Florence V. Watkins, of the Speyer School, reported[1]

[1] *Teachers College Record* (January, 1911).

the following history work in the eighth grade. It is given as a splendid illustration of the way in which motivated work may encourage originality, of the resourcefulness which it inspires, the possibilities of correlation with other work which it develops, and the enthusiasm which it arouses among the pupils. This brief report of the Constitutional Convention supplements and reinforces the report from another school given earlier in the chapter. We quote direct: —

When school began this fall the pupils in the eighth grade had at the best but a "passive interest" in history and geography. In fact there seemed no enthusiasm for any study except literature and composition. How to get them to be really interested became the problem. One night, while making from the textbook a list of the important events of the war of the Revolution, an inspiration came. Why not write our own histories and thus make use of the enthusiasm the children already felt for literature to help them become interested in history? We went to work at once.

The pupils were urged to read from all the available histories and then to select the events that struck them the most forcibly. We first listed the important causes of the war of the Revolution, and then, by years, the big, significant battles, from which great issues seemed to come. The children read from the various histories at their command and then brought to class their reports as to what seemed to them important. We compared notes and gave reasons for our decisions. When we all agreed that an event was of real importance, each child wrote it up for himself. The first draft was handed in, corrected by the teacher, and then the matter was neatly copied into large notebooks bound in boards. These notebooks were illustrated by the use of Brown's pictures and maps. For instance, there were several pictures of the battles of Lexington and Concord, a picture of the Concord statue of the minute-man, another of the monument and bridge at Concord, with a map of the New England States, on which the two towns were located.

When we came to the battles of Concord and Lexington, the pupils wrote letters describing the thrilling events of the

night before, when Paul Revere took his great ride. Into the histories must go pictures of Paul Revere and of his home. So interested were the children in this that then and there we commenced our diaries of the war of the Revolution. In these diaries we wrote anything that a boy or girl imagined would have been written had the writer been living in 1775. Readings from Hart's *Source Books* helped us to get into the spirit of the times. So well did the pupils achieve this that when our principal was reading extracts from some of the diaries she remarked to the teacher: "You or I would not be ashamed to be the author of one of these 'journals.'" Several extracts from two of these diaries follow: —

"*April 18, 1775.* Much excited by troubles in and around Boston. Crops are sprouting. Built a scarecrow to keep away crows."

"*April 19.* Last night about one o'clock a man came galloping past yelling, 'To arms! to arms! The British are coming!' My father and I hurriedly dressed, and, taking our guns and all the ammunition at hand, started for the green. There we found many of our neighbors drawn up. We waited a while. Soon the red lines of the British appeared. The major, Pitcairn, ordered us to disperse. We did not. Then he ordered his men to fire. Eight of our men fell dead. Others were wounded. Then we were dispersed. The British went on to Concord where our supplies were stored. There they did little damage. On their return we fired on them from behind stones and fences. We killed and wounded about 300 British. We lost 102. I had my head skinned by a bullet. To-night many people have gone to Roxbury and Charlestown, shutting the British in Boston."

"*May 6.* Worked until five o'clock to-day. When I reached home I found father reading a letter from an old friend in Vermont. He is one of the 'Green Mountain Boys.' He wants father to join an expedition to capture Ticonderoga, a fort containing supplies held by the British. Father started with some friends for Rutland to-night.

"Kenneth Dike."

"*April 18, 1775.* War is certainly coming. We cannot stand things as they are much longer. The men and boys are restless, and the girls wish they might take part in the war.

"I am writing with a tallow stub beside me. It gives little

light. It is very late; but I crept out of bed, when everything grew quiet, to write.

"The British are in Boston and are probably waiting their chance to fire on us. They will be surprised at the volley they receive in return.

"We are storing ammunition at towns along the way, but the supply is so small in comparison with that of the British that . . .

"*April 19, 1775.* I am so excited that I can hardly write. I might as well tell the story frontwards as backwards, so I will begin. I am anxious to reach the end. It is all so interesting.

"Just as I reached 'that' in my diary last night, I heard a great clatter and noise. I opened my window and listened. The noise grew more distinct. I heard the clatter of horse's hoofs, but above that ringing clear and true the cry, 'To arms, to arms! The British are coming!' Thrills ran through me. It seemed as though the time had come to fight at last. The sounds of the horse and horseman died away, but other sounds rose on the air. The people in all of the houses were stirring. Men were getting their muskets and bidding their families good-bye. The boys took their muskets and, with proud looks, went away with their fathers.

"JEANNETTE LEIDY."

The children were required to know about the first battle at Lexington and Concord; the invasion by Burgoyne and his allies; the surrender of Cornwallis at Yorktown. At the close of each chapter was added a bibliography of the books that the pupils had consulted and any others that were deemed to be of special value in connection with the subject.

The teacher of art helped us to design and letter the title-pages of our histories, and by a striking coincidence, nearly every pupil, working independently, selected a small picture of the Father of his Country for the title-page.

The composition work in connection with all of this has been unusually good and nearly all of the formal English lessons have been taken directly from errors in this work.

Then came the great awakener of all — the Constitutional Convention. Here even the dull pupils became genuinely enthusiastic. Since we were really to have the Convention, each one must take a part and do his share. As we had but

twenty pupils in the class, some pupils must represent whole States whose delegates took but little part in the discussions. The boy who took the part of Washington must study up especially on parliamentary rules.

Taking Madison's *Journal* as our main guide, and with John Fiske's *Critical Period of American History* and Elliott's *Debates* to help out, we began. As we must do the work in six weeks at the longest, we could take up only a few of the important discussions. Those in connection with the three great compromises were chosen: first, that the upper House of Congress be forever composed of an equal number of representatives from each of the States, and that the lower House be composed of delegates elected from the people of each State on the basis of population; second, that in counting population five slaves be counted as three white men; and third, that the importation of slaves be allowed for twenty years, or until 1808, and that Congress be allowed to control commerce except the taxing of exports, by a simple majority of votes.

The children have been very successful in changing from indirect discourse, using the reports of the speeches in Madison's *Journal* and *The Critical Period*, and so have had excellent practice in another phase of formal English. The great outline of the whole each child has had to construct for himself. There follows a short extract from a pupil's notebook: —

"On Friday, May 25, 1787, the delegates assembled.

"*Temple Franklin:* The convention will come to order.

"*Robt. Morris:* Mr. Chairman, by the instruction and in behalf of the deputation of Pennsylvania, I propose our late commander-in-chief, George Washington, Esquire, for president of this convention.

"*John Rutledge:* Mr. Chairman, I second the nomination. I feel confident that the choice will be unanimous. The presence of General Washington prevents observations that might otherwise be proper.

"*Temple Franklin:* It is moved and seconded that George Washington, Esquire, become the president of this convention. You will prepare your ballots for George Washington for president of the convention. Mr. Morris and Mr. Rutledge will act as tellers.

"Ballots collected and counted.

"*Temple Franklin:* I declare General Washington elected

president of this convention. Mr. Morris and Mr. Rutledge will escort the president to the chair.

"*General Washington:* Gentlemen, I thank you for the honor you have conferred upon me. I have never been in such a situation before or felt so embarrassed. This is a novel scene of business in which I am to act. I lament my want of better qualifications for the office and claim the indulgence of the House toward the involuntary errors which my inexperience may occasion. This convention is called to consider the revising of the Articles of Confederation in order to form a more perfect union and a more stable government. Every member of this convention should consider the great responsibility placed upon him.

"*Col. Hamilton:* Mr. President, I nominate Major Jackson for Secretary.

"*Mr. Few:* Mr. President, I second the nomination.

"*President:* It is moved and seconded that Major Jackson become our secretary. You will prepare your ballots. Mr. Hamilton and Mr. Few will act as tellers."

Procedure with formal textbook work, with "pages" as the object, will be a difficult matter for a teacher or for pupils who have come into the spirit of the work in the way suggested in the foregoing pages. Problems of vital interest will be substituted instead, and this will apply to all phases of the history work.

Motivated work and "page" work. Note two recitations in lower-grade history which were observed on the same day in different country schools, a few years ago. They illustrate the difference between mere "page" work, and work made vitally significant. They were in the third grade and dealt with Hebrew life. In the first, the teacher read the story of Jephthah.[1] It was September 27, and the preceding stories of the book had been read since the beginning of school on September 10. This story was read by the teacher, commented upon a

[1] Heerman's *Stories from the Hebrew*, pp. 50–56.

little, and the next story indicated as the work for the next day.

In the second recitation the story of Abraham was being finished. The pupils knew that he started from Ur, that he went north and west to Haran, that he turned south into Canaan, that he divided the country with Lot, etc. They knew that he was called of God, that he was visited by angels, that a son was finally born, that a wife was selected for his son in a way to keep the race-blood pure, and that a nation was thus fairly started. The pupils also knew something about the life lived by Abraham, and something about his tents, his servants, and his flocks. They had made the acquaintance of one Hebrew character, and they knew him.

All will agree as to the merits of the two recitations. Both teachers were beginners, but were high-school graduates with some normal training. The first teacher made the completion of the book his object, unmindful of the very obvious fact that the pupils were getting nothing from the work. The second teacher made his class of third-grade pupils his chief concern. He reviewed, added a little, connected the work up in a new form, illustrated, made Abraham and his habits the subject of busy-work, and in every possible way tried to make Abraham live before his pupils. This teacher intended to study Moses next, then David, then Jesus, making the connections very briefly. These are the four great characters in Hebrew history. To make them thoroughly known to third-year pupils is a good year's work in a six-months country school.

Notice another illustration of "page" procedure and the effort to substitute something better in a rural school. The eighth-grade history work for two months was indicated as the period in American history from

1789 to 1861. The teacher had taken the number of pages (98) and divided by the number of days allotted for the work (40), and so was assigning $2\frac{1}{2}$ pages each day — for the work must be covered, and 98 divided by 40 was $2\frac{1}{2}$ with only a little margin. The classroom work was equally mechanical. The pupils were getting practically nothing out of the recitation. History was merely pages in a book to be memorized.

Organizing history around problems. During a discussion of this work with the teacher, an effort was made to show that such work was almost worthless; that history must live objectively as great problems in our national life. Finally it was agreed to try to organize this period from 1789 to 1861 around three great problems, namely, (1) Development of a strong nationality; (2) expansion of the national domain; (3) growth of the slavery and secession sentiment. The first point, the development of strong nationality, is shown by Hamilton's financial plan, the assumption of the States' debt, domestic and foreign, the refunding of the United States debt, the law establishing imposts and excises, the National Bank, the Government Mint, the suppression of the Whiskey Rebellion, the neutrality policy of Washington, the Jay Treaty, the defeat of the Tripoli pirates, the War of 1812, the protective tariff, the Monroe Doctrine, the work of John Marshall on the Supreme Bench, the compromises of Clay, the great speeches of Webster, etc., etc. The second point, the expansion of the national domain, is shown not only by Captain Gray's discovery of the mouth of the Columbia River, the Louisiana Purchase, the Lewis and Clark Expedition, the Florida Purchase, the annexation of Texas, and the acquisition of Oregon, but also by the invention of the steamboat, the opening of the Erie

Canal, the building of the National Road, the invention of the telegraph, and the construction of railroads. Around the ideas of slavery and secession may be organized such facts as the invention of the cotton-gin, the prohibition of the slave trade in 1808, the Alien and Sedition Laws, the Virginia and Kentucky Resolutions, the Hartford Convention, Nullification in South Carolina, the Missouri Compromise, the Mexican War, the Wilmot Proviso, the Omnibus Bill, the Kansas-Nebraska Bill, the Webster-Hayne debates, the Lincoln-Douglas debates, the work of Garrison and other abolitionists, *Uncle Tom's Cabin*, John Brown's raid, the Fugitive Slave Law, personal liberty bills, the Knights of the Golden Circle, the Cuban filibusters, etc., etc.

The teacher was gradually led to see that practically every important event of this period could be grouped about the three great organizing ideas. That she got the idea is fairly well indicated by the fact that the pupils began almost immediately to "like" history, to bring in other texts, and to send to a near-by city library for references. Problems had taken the place of pages. The work had taken on a new significance. Isolated events and dates had been done away with. History had been changed from mere memory work into organized problem-thinking, and, with proper thoroughness and drill, work organized in this manner will be effective.

"Yes," you say, "that is very well for a little section of history, but can you so organize all history work?" Most certainly you can so organize any history work that is worth doing. If the text contains a topic which does not connect itself with some vital problem, omit the topic. Why permit the text to be the master? Most texts are indifferently organized. The child and the subject are your masters; the text is a mere servant.

American history easily falls into great problems. The following list illustrates the possibility of organizing our nation's history around a limited number of vital problems: —

(1) Stumbling upon a continent.
(2) Trying to get around it.
(3) Trying to learn something about it.
(4) Trying to claim and possess it.
    The English effort (Massachusetts and Virginia Colonies).
    The struggle for possession.
(5) Losing interest in the mother country.
(6) Why the struggle for independence?
    The struggle.
(7) What kind of government is needed?
    A convention to determine.
(8) The national growth.
    Strong central government.
    Territorial growth.
    The problem of slavery and secession.
(9) The test of free institutions. Will men die for a principle?
(10) How reconstruct the nation? The five plans.
(11) Industrial development. Dangers of monopoly.
(12) How much freedom should be granted corporate wealth; how much regulation is necessary?

The above is suggestive, and shows the possibilities of selecting great organizing ideas, great problems. The statements of the particular problem will vary with classes. The important thing is that the problem be recognized as vital. A strong teacher is desirable, but even with a weak teacher pupils will get more out of such work than they will out of the dead grind of formal page procedure.

It is well to keep in mind that inferior work in history teaching is not confined to country schools nor to lower grades. The high-school teacher is as a rule the worst

offender in the matter of formal page procedure. Most grade teachers have had normal training and try to teach pedagogically. Many high-school (and college) teachers know nothing of pedagogy, and scoff at the supervisor who tries to assist them. Such a teacher considers it her duty to assign pages, present the facts, and "fail" any pupil who does not remember the necessary number of isolated facts to enable him to pass the final examination.

The principal of the State Normal Training School of Oxford, Ohio, makes the following brief report of motivated work in seventh-grade history in review of the period of discovery and exploration in American history: —

1. Division of class to represent the different nations, England, Spain, Norway, etc.
2. These divisions to represent a nation in giving good reasons for their claims to this country.
3. One pupil to preside over the class.
4. Results: spirited debate, well-connected speeches, a good review, strong impression made as to possessions of various nations.

The historic program furnishes a means of making history more than the mere committing of facts or formal textbook procedure. The children of a sixth grade in an Illinois city determined to use their historic material for a special program which was divided into two parts, the first part consisting of stories of Columbus, the effect of sailors' stories upon his life, the effect Genoa's loss of commercial supremacy had upon his life, and his plans for carrying out his ambition. The second part consisted of a play in which was reproduced Columbus' reception at the Court of Spain after he returned from the discovery of the West Indies. The necessary music was also developed for this program.

Another school reports the development of a program growing out of their history work for the entertainment of the parents of the school. The hour was devoted to the presentation of colonial pictures. The following pictures were presented: Captain John Smith, the Leading Spirit of Jamestown; the Marriage of Pocahontas; the Captain of Plymouth; a Puritan Maiden; Miles Standish and Canonicus; Puritans going to Church; John Alden and Priscilla; William Penn, the Peacemaker; and Penn's Treaty with the Indians. The search for data with reference to costumes, and the work of preparing and arranging these living pictures, soon gave satisfaction and pleasure, and a feeling of importance, but it also gave as a necessary by-product a larger return of facts and information with reference to the period covered than an equal amount of time devoted to mere textbook work.

Summary: History work lends itself to motivation and vitalization.

The pupil can be made an actor of history by being assigned the part of a historical character in some important phase of history work — a member of the Constitutional Convention, a Separatist in England, or a Pilgrim in Holland. This idea may easily be extended to advantage. One part of the class may become Lee and his staff, while the other part of the class assume the leadership of the Northern armies. Your town or city may become Athens, while the parts of Sparta and other Greek cities are assigned to neighboring cities at corresponding distances. The class may assume the rôle of Congress in 1865, and different members of the class may urge the various views of Reconstruction.

History may be further motivated and vitalized through the pageant. This cannot be a daily occur-

rence. It need not be. Participation in one pageant during each year would mean several opportunities during a child's school life. If the work is properly done, by the pupils, with appropriate costumes, etc., it will do wonders in getting the pupil into the spirit of history so that it really lives for him.

But every phase of history work lends itself to problem treatment. Procedure by pages is similar to the Chinese mode of study. It is Oriental servitude to the book. Page assignments are unnecessary. Any topic not attaching itself to a problem of vital significance should be omitted. The text is servant, not master. Make the problems as broad as the advancement of the class will permit. It is better to make the class realize the importance of a few vital problems even if it means the sacrifice of pages. Properly handled it will mean the gain of many pages, and in any case a gain in truth.

CHAPTER VIII

THE MOTIVATION OF GEOGRAPHY

What should be learned in geography? Geography as a subject in the school curriculum is less than a century old. During its career it first developed an extensive subject-matter, and then proceeded to give the subject-matter a formal scientific organization. The present movement in geography is the logical third step in any school subject; that is, the reorganization of the subject from the standpoint of the child and its adaptation to his interests and needs. The formal subject-matter organization of geography undertook too much. It undertook to give the child a complete encyclopædic knowledge of the geography of every country in the world — to fill him full of facts — facts of the Gradgrind variety — nothing but facts — all of the facts. Only the resisting power of human nature saved the child from becoming a mere storage house for the collection and preservation of unrelated facts.

Why should a child in the sixth grade be compelled to commit the names of all of the capes and bays on the coast of North America, including location and description, unless he is planning a trip around the continent in a private yacht? Even so, there will be time enough for all of this detail after he becomes the owner of the yacht. On the other hand, it would be the part of wisdom for a teacher in the schools of San Francisco to interest the sixth-grade class in the comparative merits of San Francisco Bay and Puget Sound — as to which has the

better natural advantages as a harbor, and which may be expected finally to take, and keep, the lead as a port for coastwise and transpacific commerce. This could be made a problem of vital significance not only to the children of the community, but to the parents as well. Even an approach to a solution would involve more knowledge of value than would be gained in an equal amount of time spent in committing the names of all the bays, capes, rivers, mountains, lakes, and cities of the entire continent. It will surely follow, however, that in a study of the relative merits of San Francisco Bay and Puget Sound as harbors all other possible good harbors will be studied, actual routes traced, the influence of the Panama Canal estimated, and, incidentally, all of the important inlets or straits and capes will be mastered. There is, however, this vast difference, that they have contributed to the solution of a real problem for which the child himself has furnished the initial motive.

A similar problem for a sixth-grade pupil in Mobile would be a study of the comparative advantages of Mobile and New Orleans for the trade of the Gulf of Mexico, South America, and the Panama route. A child living in or near New York City would be interested in a different set of harbors and bays, and would work out a similar problem, if undertaken at all, with reference to his particular interest. It may very properly happen, however, that in his study of trade routes the possibilities of San Francisco, Seattle, Mobile, Gulfport, and New Orleans as competitors would be considered. In fact, they most certainly would be considered, and so these harbors would be mastered as a part of the solution of a problem, rather than as mere isolated facts. We now realize that an exhaustive encyclopædic knowledge is not possible, nor is it desirable. We demand usable

knowledge — knowledge that is comprehended and understood — knowledge that connects with the interests and problems of the child.

Facts in geography must be secondary. In teaching children the only rational aim must be the geography method and habit, and that can best be built up through the selection of real problems which have a vital connection with the interests of the child. Where such work has been successfully organized, the results are more satisfactory, even when tested by the accumulation of facts alone.

The first step, therefore, in any plan for vitalizing and motivating the geography work must be the elimination of a large part of the work that has always been connected with map study and other formal phases of geography. The result of this kind of work is well indicated by an illustration given by Commissioner Claxton. He tells of a pupil who came into his office while he was superintendent of the city schools at Goldsboro, North Carolina. In classifying this pupil the suggestion was made that she should carry geography. The pupil indicated that she had finished the geography. Desiring to test her ability, she was asked to locate the Appalachian Mountains. She immediately responded, "The Appalachian System is the highlands in the eastern part of the United States, extending in a northeasterly and a southwesterly direction from Maine to Georgia." Following the work further, the pupil was asked if she had ever seen any part of the Appalachian System. She immediately replied that she had not, when as a matter of fact she was at that time on the very ridge of the Appalachian System.

The point to this illustration is that the geography work has usually been conducted in such a way that the

pupil makes no connection between the facts as recorded in the book and their objective existence. Pupils read about the great round ball which floats in the air, and may even go out and look for it, but they never suspect that this ball is the earth upon which they constantly walk. In fact, we have come to take such a formal attitude toward the geography work that the majority of teachers are satisfied to have pupils read what "the book" says and then give it back, parrot fashion. With streams and the action of water within easy reach, these subjects are studied from the book alone, without any reference to the first-hand material. We have had fifty years of Cathay. Would not a much shorter cycle of work, which leads the child to first-hand material, be of more value? This would mean (1) the elimination of two thirds of the cities, capes, bays, rivers, and lakes that are ordinarily recited upon in map study; (2) the elimination of the detailed outline study of one State or one continent or one unit after another, until the entire universe had been exhausted; (3) in short, it would mean the elimination of all subjects which could not be connected in some vital way with the child's own experience, or which could not be thrown into a problem that appealed to the child as really worth while — a problem, the solution of which would be intensely interesting to him.

Motivating the work. The necessary omissions and eliminations having been made, there remains the problem of a satisfactory positive program. From the standpoint of the child, the chief motives for worth-while geography work are: —

1. Curiosity with reference to the world and its people. This may give a general interest in what is happening throughout the world, or what the people in other parts

of the world are doing, or it may concern itself with the satisfaction of interest in important current happenings, as the war between Russia and Japan, internal strife in Mexico, and the efforts of President Wilson to bring about peace, the Balkan war, or the present European war.

2. The relation of geographical facts to economic values, as developed from real problems of the child.
3. The social value of geographical data, since they furnish a basis for the understanding of current happenings, the planning of trips and outings, and are constantly involved in reading and conversation.
4. The play motive involved in planning grown-up experiences and likewise in the use of geographical facts in games and contests.
5. The connection of geography with romance and adventure as needed in books of travel and adventure.

These separate motives seldom occur singly, but are usually combined in any worth-while problem in geography. It will be good method, therefore, to note a number of typical motivated undertakings in geography by school pupils, and then turn back upon these for analysis of their points of strength and value.

In a particular city system the third-grade pupils became very greatly interested in stories about how "grandma" lived. So they undertook to find out, as nearly as possible, just how the early residents of their particular city lived. In the hands of the skillful teacher, this was the best sort of beginning for the study of local conditions. It was most valuable for the children to realize the hardships endured by the early settlers and the wonderful progress that had been made in the matter of clothing, shelter, and conveniences. In short, the study of clothing, shelter, and local industries was preceded by a study of the early history of the community. This study led to an appreciation of the improvements and advantages enjoyed at the present time. In contrast to

the present enjoyment of the products of our own as well as foreign lands, the possible intercourse between the people of all States and all nations and the privilege of communication, by wire or by wireless, by cable, and by postal service, with all parts of the world, the children pictured their grandmothers living in log cabins, amidst dense forests, surrounded by undrained swamps, eating the simple foods prepared by their own hands, and laboring with the primitive tools available at that time. This picture was filled out fully and compared with conditions to-day, transformed by natural development and by improved means of transportation which make possible the enjoyment of the products of all lands, and create a world-community interest. The coöperation of the entire community was enlisted in making this picture complete, and the comparison with present-day conditions was enlightening. "When I first came to this country in March, 1817," said Mr. Smith, "there was not a railroad in the United States, nor a canal west of the Alleghanies. There was not a foot of gravel road in the United States, and plank roads had not been heard of."

Creating a real problem. Under the study of shelter, the gradual advance from the log cabin to the present splendid homes was noted carefully, and then the work and the questions involved in building a house to-day were taken up. Where is wood obtained? Where was more of it obtained formerly? Why? How was it formerly prepared for use in building? How is it now prepared? What kind of wood was used for building formerly, and at the present time? Notice the rafters and joists in a very old house, and compare with the sawed yellow pine in a new house. Where do we get the yellow pine? What would you see if visiting a lumber

camp in Mississippi? Where do we get the red-cedar shingles? What was formerly used? In the same way attention was given to other materials, nails, plaster, glass, etc. The idea here was to create for the pupils a real problem, and to go about solving it in a material way without books and without any mere repetition of what was stated in the books. The wide-awake teacher can imagine with what intense interest the pupils reported their investigations of a very old house, and can realize the gradual growth of appreciation because they were permitted to enjoy the benefits of progress and of other people's work.

The study of fuel led to the realization of the fact that wood was formerly used as the only fuel; that forests were ruthlessly destroyed; that at present there is a scarcity of wood; and that prices are high accordingly. Coal is now the chief fuel of the community. The effort was made to find out about this fuel by visiting coal-yards, by making inquiry as to the source of the coal-supply, by making an imaginary trip into the coal-fields of West Virginia, by going down into a coal-mine, and possibly by coming to know some of the fellows who worked day after day in mining the coal which was burned in their grates and furnaces. Gas as a fuel was also of interest to them. There was a local gas company in the city. Gas was supplied from wells in a neighboring county. Cost and advantages of gas were noted. It was found to be commonly used for lighting, for cooking, for the bath-heater, and for the grate in the fall and late spring.

In a similar way and as thoroughly as third-grade pupils were able to do so, the present method of lighting as compared with former methods was studied. The pupils were permitted to gather some pine knots, to close

the blinds, and to see the kind of light by which their forefathers had read. They were helped to make a tallow dip, and to test it as a means of lighting a room. Candles were brought from home by some of the children, but not from homes where they were used as a means of lighting. They are at present merely a means of decoration. Even the oil lamp in the modern city has almost disappeared and in many homes is not found at all, or is used merely as a makeshift when gas or electricity fails temporarily. It is possible for children to realize the difference between turning the electric switch and having to go through the hardships of collecting pine knots, or of making candles and being compelled to use them as a means of lighting. In this particular schoolroom, the old candle-moulds were brought and one of them was filled. The total result of this work was to give a very vivid idea of the change, and a keen appreciation of present conveniences.

The improvement in education was noted in a similar way. The advance to the graded schoolroom, with uniform texts and with every economical convenience; the advance from the single teacher, responsible for the entire program, to the special teachers and supervisors, in fact, to a modern system of schools, was observed.

From local to foreign geography. In all of the work upon local conditions and changes involved, opportunity was given from time to time to let the needs of the child take him to distant regions; from the yellow-pine rafters to the forests of Mississippi and Minnesota; from the coal-yards to the mines of West Virginia; from the grocery store to the sugar plantations of Louisiana; from the meat-market to the grazing plains of the West and the packing-houses of Kansas City and Chicago; from the jewelry store to the silver-mines of Colorado and the

gold-mines of California, on the one hand, and the great plants which use the blowers, on the other hand; from the furniture factory to the mahogany forests of Central America, on the one hand, and to the great markets of Chicago and New York, on the other.

Notice herewith a detail of the study of clothing, in the third-grade work in this city. The teacher reported: —

In the third-grade geography class we were studying clothing. The special subject was cotton clothing. The aim was to find out as nearly as possible how cotton is made into cloth. The children collected stories and descriptions of Southern cotton-fields. They collected pictures and found out all they could from other people. The cotton in the pod was brought to the room. We examined it with the seeds. Pictures of the cotton-gin were brought, and the children also found out about it by talking with older people. We borrowed a partial exhibit of the manufacture of cotton from the raw material to the cloth, and finally different pieces of cotton cloth were brought.

In another third grade of this same city, iron was taken as a detail for particular study. The teacher reports it in the following words: —

The members of the class were told that they would be allowed to go to the foundry to see work in iron, and the study of iron from the text and the making of maps, showing the iron-producing regions, had a new interest. At the foundry they saw the smelting of pig iron and the various stages of the metal to the manufactured machines, some of which we found were to be shipped to Long Island, which furnished the basis of a lesson on trade routes.

They were also told that they might make a collection of iron, label their specimens, and leave it as a gift to the room.

It may be objected that, where the children are permitted to determine more or less the lines of work, thoroughness and system will be lacking. Such may be the case sometimes. The best procedure for the object-

ing teacher is for her to give the pupils an opportunity of helping to determine the lines of work, so managing that the children are intensely interested in carrying it to a successful conclusion, and then to see at the end of the year if the total results are not in favor of the scheme in which the children helped to determine the lines of work. We must always assume a well-prepared, sympathetic, and sensible teacher in charge of the work.

In a fifth grade in the Horace Mann School, the children were asked to find what kind of flour was used in their own homes, and to learn, if possible, where it was manufactured. This was the objective start upon a study of considerable extent on the food-supply of New York City: —

It might be well to state at the outset that this was not an entirely new subject, but one that had been touched in various ways from the kindergarten up. Many of the children had been on farms at one time or another, and they lived over these experiences in our harvest festival when they saw "The Farmer's Song" dramatized by the kindergarten, and the children of the first four grades play through the process from the planting to the harvesting of the grain. While the preparations for the festival were going on, a sheaf of wheat was on exhibition in the hall and also heads of several varieties of the bearded and beardless wheat. The attention of the children was called to these.

Special study was made of the wheat-growing regions, and the children colored maps of the United States showing these sections. They became familiar with the names and locations of these States so as to find them readily on the maps.

We made a study of a wheat-farm in North Dakota, using chapter xxi in Carpenter's *North America* as the basis. The conditions of growth were noted; then we referred to the geographies at hand for further information concerning the surface, soil, and climate of these States.

The wheat was traced from the farm through the various milling processes. The Gold Medal exhibit, consisting of a case of twenty-four bottles, each containing a sample of wheat

in some stage of manufacture, was found very helpful. Rocheleau's *Great American Industries,* and Carpenter were helpful at this point. The previous year the children had visited the Hecker factory in this city and had seen some of the actual manufacturing processes as well as a grain elevator, and the unloading of the wheat-boats which had come through the Erie Canal to New York.

They were interested, too, in making their own collections of wheat products; and, under the leadership of one of the children, bottles were purchased from a neighboring drug-store, and the contributions of flour, feed, starch, and breakfast foods were placed in them and labeled.

Grains of wheat were given the children and they found the part out of which bran is made. Then some flour and water were mixed together, making a dough. This dough-ball was washed in water, leaving a yellowish, elastic substance. This, we told the children, was largely the gluten part of the wheat. That which was washed out was tested and found to contain starch. This experiment was supplemented by the use of a Gold Medal chart of a grain of wheat which indicated the five bran coats, the gluten, grains of starch, and the germ. The children made greatly enlarged drawings of the wheat-grain with the help of this chart, and labeled the different parts.

The information gained at home as to the kinds of flour in use was the starting-point for locating the chief milling and shipping centers. These were later placed on the outline maps. The cities selected as most important were: Minneapolis, Duluth, Milwaukee, Buffalo, St. Paul, St. Louis, and Portland.

We next studied the chief shipping routes, special mention being made of the three water routes to the Atlantic Coast and the advantages of these. Two lessons were given on the Great Lakes as a water highway. Many different folders of the railroads were brought to class, and the children were asked to look at the accompanying maps and make a list of those roads which could materially help in distributing wheat or its products.

The final disposition of the wheat which is sent to the seaport cities was considered by looking up the great wheat-producing countries, and those which do not supply their own demand. These cities were also located on the maps.

The foregoing illustration is valuable as showing the possibility of correlation when the situation is thoroughly motivated. This will be noticed a little later in the discussion of correlation.

Direct correspondence with other regions. The sixth-grade work in geography as outlined for American children is commonly the study of the United States and its various sections by groups of States. It is interesting to note the possibilities of motivating this work so that it becomes not merely an accumulation of facts, but work carried on in such a fashion as to give reality; in short, to connect it up with worth-while and interesting experiences of the children. One teacher in a Central Western city established correspondence between her children and the sixth-grade children of Ashtabula, Ohio. On the part of the local children it required them to put in good form the interesting facts with reference to their own city, its manufacturing interests and its connection with the surrounding agricultural community. In return, the children were surprised to learn of the immensity of the plants of Ashtabula for handling iron ore and the industries centering around this, the largest of her industries. Ashtabula happens to be in direct line and one of the most available ports on the lake for the transfer of ore between the iron mines of Minnesota and the coal region of Pennsylvania. The exchange of correspondence and postal-card illustrations gave the children a vivid impression of this industry and led them to know one, at least, of the important lake ports of northern Ohio.

Another teacher had her children carry on a correspondence with the sixth-grade pupils in a very small village school in New Mexico. The teacher of this school had formerly taught in the schools of the Central Western city. The children were therefore interested in

knowing about her surroundings and came to have a vivid idea of a country without irrigation, the results of irrigation, the fine climate, and something about the possibilities and the future of the country.

In still another sixth grade of this system, the question of the coal-supply became very important because of a strike on the Baltimore and Ohio Railroad, which temporarily interfered with shipping facilities. The pupils became intensely interested through the efforts and leadership of a boy in the room whose father was a coal-dealer. The teacher asked the superintendent what to do about it, and he wisely advised her to follow the lead. The result was the gathering of information on coal from the Bureau of Statistics at Washington, and even through a similar bureau in London. An understanding of the coal-supply of the entire world became the ambitious problem of this group of children. The teacher wisely guided and directed, and was able to center around this problem a study of the needs of different regions of the United States, the routes of commerce, the increase of the use of coal as a fuel, and in a similar way the interdependence of the entire world.

One class developed a particular interest in the Southern States. The teacher encouraged this interest. Data were collected from the railroads, — the Louisville and Nashville, and the Southern Railway. Real-estate agents were consulted with reference to available lands for sale and the good points of climate and soil. Some of the children in the class developed a correspondence with children in different parts of the South, securing cotton-bolls and illustrations of the cotton industry, first-hand descriptions of the turpentine industry, and similar material with reference to the great iron industry in Alabama. This work finally led the class to the prep-

aration of a set of materials from which slides could be made, the result being that the superintendent had a set of more than a hundred slides made, showing the occupations, industries, and to an extent the scenery, of the Southern States. It is surprising how the work on this one region illuminated all other regions for the children. They had an experience that was real to them. They had carried on correspondence. They had collected and organized material. They had sought to know, as nearly at first hand as possible, that particular region. So when it came to a study of some other section of the country, their imaginations were keen and alert, and they were able to comprehend more quickly and easily the words of the book. From the standpoint of economy in mastering the work of the grade, this undertaking, which required considerably more than the allotted time, more than compensated for the extra effort put forth.

Notice an illustration of how a seventh-grade teacher proceeded in getting at the significant problem with reference to the study of a foreign country. She reported as follows: —

In the first lesson the pupils were told that they were going to begin the study of the country that leads the world in the exportation of grain. After some preliminary discussion the pupils set to work to find out why Argentina is able to produce and export so much grain. In discovering this they naturally brought in all the geographical elements bearing on that subject, such as climate, soil, rivers, cities, people, and facilities for shipping.

Other questions bearing on the subject were also given; such as, Why does Argentina have more grain to export than the United States? Does the large production of foodstuffs in Argentina affect the price of similar goods in our country? What country supplies most of Argentina's imports? Why does Argentina do so little trading with the United States? How may the United States increase her trade with Argen-

tina? How do you account for the rapid development of that country?

The imaginary journey. The imaginary journey appeals to the play instinct of the child, requires the exercise of a vivid imagination, and when wisely used it becomes a profitable means of geography study. It brings reality into the work, requires definiteness in planning, and is quite commendable when not overworked. It turns the memorizing of facts into the enjoyment of present experiences, develops a sense of distance as measured by time or expense, gives familiarity with methods and routes of transportation, and develops an acquaintance with the facts concerning distant places and the customs of their people. One teacher makes the following brief report on a European trip which was planned at the close of a study which developed from an interest in local railways and time-tables: —

In studying commerce and its aids, the 5A pupils made a specialty of railroads and steamships.

We first procured maps of the various railways and from them developed a map showing the principal systems; also sent to the Cunard and Hamburg-American Steamship Lines for material describing the vessels, cruises, and points of interest visited; the rate-sheet, etc.

This was done with the supposition that they were planning a trip for the next vacation.

One of the best of such imaginary journeys, from the standpoint of developing appreciation of distances and world-wideness, was the aerial trip around the world taken by the upper-grade pupils in Topeka, Kansas. The Topeka *State Journal* published a map showing the proposed airship route open to all competitors, and starting from the grounds of the Panama-Pacific Exposition in May, 1915. Prizes aggregating three hundred thousand dollars were offered for this race around the

world covering a total distance of twenty-two thousand miles, and providing for twenty-four official stops. A careful reading of several dozens of the children's papers shows that they were thoroughly interested in this undertaking, that they conceived it as an individual experience, and that they used the library and all available sources to learn about airships, to estimate the distances between stops, and to work out the details as to sights along the route. Different teachers managed the plan in different ways. In some rooms each pupil undertook to cover the entire route. In others different individuals wrote from particular places, so that when all of the letters were combined the person receiving them (usually the teacher) would have a good idea of the interesting features of the entire route. The following is Elizabeth Balch's report of her experiences in New York City: —

Our machine needed a few repairs, so we left it at one end of New York with a machinist.

We arrived at about eleven o'clock in the morning, so we still had some time left before noon. We took a car and rode to Fifth Avenue. We got off at the General Post-Office and went inside the building. We stayed about fifteen minutes and went on to look at the Singer Building. We stayed here only a very short time, and then hurried on to the New York Times Building. After staying about half an hour we went over to Madison Park and ate lunch.

In the afternoon we went to see the Upper Bay. We watched the immigrants arrive at Ellis Island and we saw the beautiful Goddess of Liberty. We visited the Aquarium and saw some very interesting things.

We left the Upper Bay and crossed the New East Bridge. We then went to the menagerie and looked at the animals. The cages of the animals are grouped around a quaint old building called the Arsenal. We went to Washington Square and went under Washington Square Arch, which is made of marble and cost over two hundred fifty thousand dollars.

In the evening we saw Grant's Tomb which is very beau-

tiful and then we went to the highest office building in New York which is the Park Row Building. We stayed here a short time and then walked up Wall Street toward Trinity Church.

That night we spent in a small hotel. Next morning we went to see the Metropolitan Art Museum and we also saw the Obelisk which is called Cleopatra's Needle. We did not stay long at either of these places but went to see the City Hall. In the City Hall Park we saw a beautiful statue of Nathan Hale.

In the afternoon as our machine was repaired we started on our journey again.

It is evident from the above that the information was gathered from books, some of which were not very modern; but when we consider that this was the work of a sixth-grade pupil, we must recognize it as an effort thoroughly worth while. The usual emphasis in this particular type of work is necessarily upon the locational, descriptive, and informational phases of geography work. This, however, is recognized as having some value, and an undertaking such as the aerial trip certainly is of great value in giving the child an appreciation of the possibilities, through modern invention, of tying the entire world closely and quickly together.

Correlation. "Supply motive in one subject and this motive leads to others and a correlation of subjects. Isolation is overcome, and history, reading, geography, and arithmetic become the means by which real life is carried on."

Geography has been the correlation subject. It has been most frequently selected as the correlation center. Dr. Frank M. McMurry would organize most of the grade work around geography as a center. Dr. C. W. Stone, formerly director of the Training School at Farmville, Virginia, used geography as a center of interest in the first four grades. His scheme indicated Home

Life as the center for first-grade work; Occupations as a center for second-grade work; Community Interests as a center for third-grade work; Helps from Other Lands and Transportation and Life in Other Lands as the center for fourth-grade work.

The more thoroughly the work is motivated, the more anxious are the children to make it the center of all lines of school effort. This is a perfectly natural and logical situation, because, if the children are interested in a problem, they naturally bring that problem into all of their work. The fifth-grade illustration of geography work in the Horace Mann School correlated work in cooking, arithmetic, language, and art. Miss Bennett says: —

> In these lessons the children prepared cream of wheat and white sauce, and baked bread. In connection with the first topic they discussed why cream of wheat makes a good food. This brought in review the food elements in wheat and opened the subject of expense. The cost of a cereal for breakfast was put in an arithmetic lesson, and the result compared with the cost of meat, fish, and eggs, having the same value in food units. . . . The class also used short accounts of the dramatizing, cooking, map-work, and collections, for the news items sent to the Speyer School weekly paper. Those whose papers were chosen for publication were proud to see their signed articles in the ambitious little sheet. After the cooking-lesson the recipes were written for future reference. During these written exercises the words on which the children needed help in spelling were placed on the board.
>
> Another bit of composition, which also served as a review, was an imaginative story of the experiences of a grain of wheat. As this would have been a very long piece of work if written in full, it was given in outline form — topics and sub-topics. These were then used as a guide in oral composition; that is, in telling these stories to the class. One of these uncorrected outlines is given below: —

The Adventures of a Grain of Wheat

In South Dakota
  Growing
  Being cut
  Threshing
In a grain elevator
  Being weighed
  Being cleaned
In a whaleback
In the factory
  Being ground
  Being put into bags
Sent to England
  On an ocean liner
In London
  In a home
  In the oven
  On the table

There were several opportunities for the class to write letters asking for some of the illustrative material.

The aerial trip arranged in the Topeka schools furnished exercises along many other lines than merely the geography itself. This was particularly true of the language work. The following is a letter from one of the children, expressing appreciation for the opportunity of doing this type of work: —

Topeka, Kansas,
April 6, 1914.

Dear Mr. Wilson: —

We thank you for what you did for us in the way of the circumnavigation of the globe by aircraft. It helped us a great deal in our geography.

We had a map of the world put on the blackboard on a very large scale. Each of us made a book about it and discussed it in our book.

We got more out of this study of the world than we would get out of several weeks' regular work and beside it was very interesting.

We learned about the people and their habits, which will be of great value to us.

We learned about the location of places that before we had only a vague idea where they were.

On the whole I think this study of the world has been very beneficial to us and I thank you for sending it to us.

Yours truly,

DONALD BARSTOW.

There is no doubt about the sincere appreciation of the pupils when they are given an opportunity to do work which has interest and motive. One teacher from another city, referring to the usual type of work undertaken in geography, writes: —

And why is it not really worth while? For the reason that there is, especially in higher grades, a lack of motive. Supply it! What happens? Pupils see the school is furnishing studies, giving experiences which make for efficiency, studies which supply a real need, and a clear insight into life and activities roundabout. They like school and therefore remain in it longer.

In the sixth grade pupils have been heard to say: "This does not seem like school. It is different." "All our studies are so interesting." "Why can't we do this way all the time?"

Course of study. The question, "Why can't we do this way all the time?" naturally leads to the consideration of a course of study. Teachers agree that the best course of study cannot be made by the superintendent alone. They must have a part in it. They must contribute. They must help select the topics and readings, and must have an influence in shaping the general plan of the course. Every teacher will agree to this. But pupils will go a step further, and every wise teacher and superintendent should be willing to go with them and agree that the children themselves and their interests should be factors in determining the course of study.

This does not mean that the superintendent and teachers will not determine in a general way the lines of progress, but it does mean that the detailed topics and the particular problems should be subject to modification in line with the child's interests. Some teachers may object that such a procedure will not permit the teacher to plan definitely, that it will subject the teacher to the whim of the pupils. The superintendents formerly held the same view about the teacher's participation, but the wise superintendent has now learned that it is much better to consult, not so much the whim as the wise judgment of the teacher. And in like manner the wise teacher will consult the interests of the child, and will find no difficulty, if she is a truly wise and capable teacher, in guiding those interests into the channels that are thoroughly worth while.

Suggestions for a course of study. In view of the above statements it would be unwise to suggest a definite course of study, except in the most general terms. Certainly a foundation should be laid at some point in the lower grades by a study of the local environment. This local interest should extend not only to food, clothing, and shelter, but also to the institutions, to the means of transportation, and to the geographical features of land and water. The child should actually observe erosion, miniature delta formation, the action of frost, etc. He should see in the local stream, if possible, the island, the cape, the bay, or, at any rate, he should be made to appreciate these as nearly at first hand as possible under the conditions. It is only in this way that the child can build up the necessary perspective and basis for further study — that is, for real study — and get away from the mechanical memorizing of facts. The importance of a knowledge of the community as a basis for the further

study of geography is well illustrated and emphasized in the *Newark Study*. This is a work of over two hundred pages, dealing with the local geography, civics, and sanitation of Newark, New Jersey. It was prepared by the assistant superintendent of schools for use in the schools. It is made the basis for much of the geography work in grades 3A, 4A, and 7A. While, in our opinion, an undue amount of emphasis is placed upon local map study and locational geography, it is nevertheless significant as showing a proper attention to local environment. The 7A section, dealing with Newark as a type of the manufacturing and commercial city, shows work of an excellent character, work that can be carried forward by any wise teacher as a thoroughly motivated undertaking. Children are interested in their own city, its industries, and the world-contacts growing out of its activities.

A county superintendent in Iowa has organized much of his geography work around the corn story and the weed booklet. Note a few sections in his outline for the corn story: —

II. The Corn Belt
   1. Sketch a map showing in what States corn is raised. Shade the different States to show where the most corn is raised.

III. Uses of corn
   1. Its use as a food for both man and beast.
   2. Different articles made partially or wholly from corn.

IV. Production
   1. Amount raised in Iowa and in the United States annually.
   2. Average yield per acre in Iowa.
      Average yield per acre in Pocahontas County.
   3. How the value of Iowa's corn crop compares with her other resources.

4. How its production has been and may be increased by the testing of the seed, improved cultivation, etc.

This work is planned for the upper grades, and shows a gradual widening from the local community to the study of the nation. It shows a good type, not only of geography work, but of correlation with other work, as it is intended that work in language, drawing, penmanship, spelling, and numbers shall be directly connected with the corn story and the other work planned.

Following the work upon local geography, it seems wise to give a brief world-wide view. Such a view may be easily accomplished through the use of such a text as Chamberlain's *How We Are Clothed*. This plan requires a minimum of locational geography, puts the emphasis upon the economic and industrial phases of the work, and tends to give a quick, interesting, and sympathetic view of people throughout the entire world.

The next step should doubtless be a more intensive study of the United States, with enough emphasis upon some particular region to make it stand out vividly and to enable it to serve as a basis for the understanding of other regions studied in less detail. The final work will be the study of foreign countries, the time being divided in proportion to our interest in those countries as indicated by our exchange of products with them. This will mean the attack of each country as a problem, centering the study upon our chief interest in the country from the standpoint of competition or as a source of needed supplies.

This plan for a course of study does not attempt any systematic encyclopædic mastery of the facts of the world. Such mastery is not possible. We prefer to agree with Dr. Eliot in his discussion of the cultivated man,

that "Culture can no longer imply a knowledge of everything, not even a little knowledge of everything. It must be content with general knowledge of some things, and a real mastery of some small portion of the human store." This is a profound modification of the idea of culture which formerly prevailed, and we accept it as a good working basis for the formation of a course of study in geography. Let the child's interest determine in large measure the topics selected. Study large, significant problems growing out of his interest; handle this interest in such a way as to give him the geography method and habit; and expect with assurance that in the final returns he will be further along, even from the standpoint of facts, than will the child who was guided by a teacher with the old notion that the business of geography is a mastery of all the facts.

Summary. Analyzing our discussion of the geography work and referring it again to the question of motives, it is apparent that the strongest incentive to the child is to have a problem of real worth that has grown out of his own interests. Curiosity will help, will often carry the child forward when once started, and will lead to a search for new and interesting data. The social value may occasionally be large, and it would be much more significant if the parents were educated to coöperation, and could give the child an opportunity at home to use his information for the benefit of the entire family circle. This value should grow in importance and should extend beyond mere class leadership. The need of geography as a basis for understanding romance and adventure; books of travel or history and literature should be a strong motive in any well-articulated school program. This depends largely upon the wisdom of the teacher, or the wisdom and coöperation of the teachers when there are several teachers working with the same children.

The play motive may certainly be made much stronger than it is commonly. Well-selected games will help much. The best help, however, is a sane, wholesome teacher with enough life and personality to make the most difficult task assume the aspect of play. Such a teacher is a constant joy. She will carry the spirit of play into all phases of the work. John will become the real-estate agent from Florida trying to sell an orange grove to one of his classmates. Mary will take an aerial trip around the world with her uncle. William will organize a steamship company and will make no end of effort to be fully informed before finally selecting his terminals and his routes. In short, the play motive supported by an interest in the solution of a real problem will carry any child successfully through the most difficult tasks in his geography work.

CHAPTER IX

THE MOTIVATION OF ARITHMETIC

The demand for practical arithmetic. The arithmetic work lends itself admirably to the disciplinary doctrine, but there has been a growing demand that work in arithmetic shall be practical, and that it shall appeal to the child through the proper regard for motives in the selection of subject-matter. This has resulted, on the whole, in the elimination of much of the arithmetic work which was formerly considered necessary, and it will be worth while, before concluding this discussion, to introduce in detail the eliminations which are now more or less fully agreed upon. It will be well, however, first to enter into an analysis and discussion of the proper motivation of the arithmetic work.

In the first place the work in arithmetic is adapted most admirably, possibly better than any other subject, to competition and the possibilities of measurable success. Competition has in former years been the strongest motive of the subject. Throughout the lower grades this, in itself, has been a sufficient impetus to cause the child to endure the necessary drill and drudgery to secure proficiency. The arithmetic work in its last analysis is simple and easily systematized, making it possible for a competent teacher to keep pupils constantly succeeding and advancing, without discouragement. In this type of work, however, it is possible to introduce situations which will motivate even the drill work.

Miss Steele, of the Horace Mann School, asked her third-grade pupils to collect the election returns and

present them on a certain Wednesday morning. Her object was to give a thorough drill and review in the reading of numbers. The pupils were so interested in the returns that none came to class without plenty of data on hand, and few without facts showing the successes of his own particular party. A group who observed the teaching of this lesson were one and all convinced that no problem could have been set which would have more fully covered the ground of a thoroughgoing review in the reading of numbers. But the formal object of the lesson was included in a larger interest, with the result that a well-conceived problem was devised with the necessary motive for work.

Correlation with other subjects. A second source of motivation in the arithmetic work is found in its practical applications to other school work. The boys in the manual-training class must necessarily measure lumber, compute sizes, and secure results that are accurate to a high degree. Without the necessary knowledge of arithmetic, including fractions, no boy can carry on his work in manual training successfully. It is not an unusual experience for a teacher to find a boy whose chief interest is in manual training, but whose preparation along other lines is not strong enough to carry him forward in his line of interest.

A typical case of this kind was disposed of by asking the manual-training teacher to accept the boy as a special student, allowing him to do anything that appealed to him. The result was a speedy realization of the fact that, in order to accomplish his desires, he must be prepared to read and properly interpret the plans. This emphasized directly his lack of proficiency in reading and understanding the English language. He soon realized, also, that to make progress in his work he would

need additional knowledge of arithmetic, including fractions, decimals, and square root, and at least an elementary working knowledge of geometry. After a few weeks the boy, in order to get these things, begged to be permitted to enter the regular classes, and asked to make up the work which he had missed, in order to become regular in his classes.

The work in domestic science is constantly requiring the use of arithmetic. There is need of the accurate weighing and measuring of materials which requires knowledge of the tables of weights and measures; articles must be purchased and the cost definitely figured; mixtures must be made in the right proportion, garments must be measured and cut, and there must be withal a system of accounts to enable the youthful housewife to know what different things are costing.

The work in agriculture is furnishing a new line of practical problems in school work. Among these we find the problems of measuring land; of measuring corn, wheat, or oats in the bin; of measuring hay in the stack or in the mow; of estimating the cost of lumber for a fence or a barn; of figuring percentages of gain due to a particular treatment, such as spraying the fruit trees or the potatoes; of figuring rations for horses and cattle, and the profits in handling sheep, hogs, or cattle. There is necessity of testing the dairy herd by regularly weighing and testing the milk. There is also the necessity of a careful system of farm accounts by means of which a farmer may know whether he is gaining or losing in his enterprise.

Several lines of the agriculture work are carried on in towns and cities without a school farm. The school garden is always a possibility on a vacant lot near the school. These gardens will provide all the problems

necessary. First comes the division of the ground for the different children and for the different flowers and vegetables; then comes the buying of plants and seeds; and finally, the sale of products and computation of profits. It is sometimes possible for the children to carry forward individual projects relating to work, such as taking care of a pen of chickens, which requires an accurate account of the cost of feed and of the returns from the flock, as well as an item giving credit for necessary labor.

The children attending the model school connected with the summer session of an agricultural college secured a great deal of number material from an excursion to the dairy farm. They became interested in the cost of feeding the herd; the length of time the silage on hand (240 tons) would feed the animals; the amount of milk secured in a week; the amount realized from the sale of milk, cream, and butter; and a comparative study of the expense and income from an individual cow. All of these became problems of great interest to the class, and, fortunately, it was possible to secure the necessary data to answer the questions involved.

The work in history and geography may be made the basis of arithmetic work in a way which is thoroughly worth while, providing the pupil's arithmetical ability is used in interpreting the facts in history and geography in an interesting manner. It sometimes happens, however, that a teacher will drag into the arithmetic work unrelated material from history or geography that would much better be omitted entirely. This is simply a case requiring judgment. A teacher should studiously avoid the mechanical and uninteresting way of using such material as the statistics of population and production. It were better to omit the connection entirely than to drag in unrelated material.

There are numbers of games in which success largely depends upon the knowledge of a small amount of arithmetic. It is surprising what an effort children will put forth to master the amount of knowledge required to win in a game. There is no reason why the school should not utilize this situation and make success in well-selected games a motive for mastering the work in arithmetic. Such a game as dominoes gives pupils marked ability in adding and subtracting. No one should object to this game in the schoolroom. Dr. David Eugene Smith has given us a large collection of usable games. The following are suggested as some of the simpler ones which may be used in any school: *changing places;* modified form of *Simon says thumbs up; odd and even; fireman; hod-carrier; bean-bag; ring-toss; cave man; boy scout; arrow practice; tenpins; tumble in,* and *spin top.* These games involve counting, reading of numbers, adding, subtracting, multiplying, dividing, measuring, and other processes that should finally become automatic with the pupil. There is no reason, therefore, why they should not be used over and over again, nor why they should not be utilized as a means of creating greater interest and enthusiasm among the pupils.

The appeal based upon play and games is particularly valuable in the lower grades, and yet there is no reason why it should not be carried into the upper grades. An upper-grade motive more or less corresponding in intensity and usability is the value of arithmetic work to the pupil himself at home, in the store, on the farm, in keeping his own accounts or in carrying forward a business enterprise of his own, such as managing a paper route, caring for a pen of pigs as an individual enterprise, or caring for the family garden on a business basis. The farm boy will have additional opportunities. He will

occasionally have an opportunity of taking over five acres of corn or a certain number of shoats or some calves. He should be encouraged to keep strict account of undertakings of this kind so that he may know something as to the cost of labor involved and the final profits. In these business enterprises the personal element enters quite strongly, and the boys and girls who are earning money for themselves are really quite interested in mastering fundamental processes to the extent of their needs.

A fifth means of motivating work in arithmetic is the imaginary problem. Many teachers object to imaginary or made-up problems, insisting that all of them shall be real in that they actually occur. Dr. Suzzallo calls attention to this situation in the following words: "The psychological fact that needs to be forced upon the attention of reformers is that, with proper artfulness, an artificial problem may be even more vital and real to the child than one taken from life." This does not mean that the use of actual social material is to be discouraged. It simply means that a problem may be conceived which will meet all of the conditions, provide a wider range of opportunity, and permit a more organic development of the subject than is possible where the teacher must wait for actual cases to develop.

The discussion of this point need not be carried further here, but it will later be linked with a discussion of the organic motivation of the entire course of study. A teacher is further warned, however, in the words of Dr. Suzzallo, that if these problems actually occur among the grocers, the bankers, or the wholesalers, and in this sense are indeed concrete, "yet much useless effort may be expended in carrying these current problems into the classroom, in spite of the fact that they may be entirely

comprehensible and interesting to the pupil." It is after all, therefore, a matter of good judgment, and this the teacher must use in all of her efforts to utilize the child's life in its quantitative aspects, to take his play and games, occupations and experiences into the schoolroom for the development of mathematical ability.

Any attempt to give the course of study *organic* motivation should keep in mind the necessity of adequate results at the end of a definite period. The teacher who begins the arithmetic work with the notion that there should be no drill, and that arithmetical processes will be employed only when the pupil has an individual problem demanding solution, has entered the realm of the impractical theorist. And yet courses of study in arithmetic have been attempted on this basis, the arithmetic work being made subordinate to shopwork, industrial training, and practical problems that arise in connection with this work. According to this notion, if a boy needs to figure a pattern he will take his arithmetic and hunt for the part that will serve him at that time. If a girl needs $3\frac{1}{2}$ yards of dress goods and must pay $12\frac{1}{2}$ cents a yard for it, she will take her arithmetic, look up fractions, and is not permitted to continue work on her dress until she has mastered the problem in arithmetic.

Unless she is unusually strong, the teacher who proceeds according to this plan will fail utterly to get an organization of the subject-matter of arithmetic; she will fail to get speed and accuracy in using the simple processes, and she will have entirely lost the unity of the subject. Except with the teacher of extraordinary skill and patience, the results will not be at all commensurate with the amount of effort expended. However, the plan had value in modifying teaching methods. The effort to develop courses of study from this standpoint

supplied a motive very much needed by the teacher. The work in arithmetic had become so formal and so fully organized from the disciplinary standpoint that an overdose of some kind was necessary. Skillful teachers will get results under any conditions, but the attempt made by the average teacher to subordinate arithmetic to other subjects will certainly result in giving insufficient returns. It is conceded to be no longer necessary to resort to such extreme methods in order to safeguard the interests of the child.

The arithmetic work can be thoroughly motivated without destroying the unity of the subject, without sacrificing it to other subjects that are possibly not any more important than it is. Certainly any plan of motivation should retain the drill which is necessary if automatic results are to be secured. And it should not hinder or hamper the teacher in securing the speed and accuracy which will make the arithmetic work of practical utility when actual problems are met with after the pupil leaves school. This is what is meant by an organic motivation of the arithmetic course. Note an illustration in what the teachers of one city system did. They believe that they have accomplished the result with a minimum of effort, and the work is thoroughly motivated. Pupils were given problems which to them were real and vital. Their interest in the subject was retained at the maximum, and at the end of the course they had the necessary speed and accuracy, and this has been secured without neglecting other subjects and without putting undue time and stress upon the study of the arithmetic work.

Buying a lot and building a house. The illustration follows. The work assigned to the eighth grade involved the borrowing, loaning, and investing of money, banking and business practice, square root, and mensuration.

These lines were pursued vigorously for four days out of each week. On the fifth day a special problem, large enough to continue throughout the term, and directly related to the class work being pursued, was taken up by the class. This problem varied from time to time, but for purposes of illustration the work of buying a lot and building a house is given. Each pupil in the class was expected to select a vacant lot in some part of the city, ascertain the price of the same, and proceed to buy it. Each pupil in the room, or each group of pupils, was given certain limitations. For instance, each pupil in Group I was supposed to be twenty-four years old, to be paying fifteen dollars a month rent, to be receiving a salary of fifty dollars a month, and to have one thousand dollars in cash on hand. In buying his lot the pupil was required to pay cash, so that a pupil in Group I was compelled to buy a lot not exceeding one thousand dollars in value. Having located his lot and ascertained the price, he secured a legal description, made inquiries as to delinquent taxes and assessments, and finally bought the lot. Deeds were brought into class. Titles were considered. Deeds were recorded and entered for taxation.

Having secured the lot, the pupil began to consider a plan for building. This involved a number of problems. The class considered the cost and advantages of different systems of lighting — lamps, gas, and electricity. They considered different plans of heating — stove, warm-air furnace, and hot water. They figured the expense of the bath. Almost without exception pupils decided to have modern conveniences, including electricity and a self-ventilating system of heating. Each pupil was required to draw and submit a plan of a house, together with an estimate of the cost of building the same. The regular day for this work was Wednesday. It was most com-

mon to hear pupils say, "Oh! I wish Wednesday would come." There was no lack of interest and the instruction was the equal of that in any other line.

As no pupil had enough money with which to build a house, it became necessary for him to borrow. In studying the question of borrowing money, the different groups were instructed to make inquiry, some of banks, some of building and loan associations, and some of private parties. After the report was made, each pupil was required to make arrangements for the necessary money to complete the building of his house. In securing the loan the property was mortgaged. Mortgage papers were brought to class and explained. Each pupil was required to show that his income was sufficient to pay the interest on his loan, provide for his family, and make some payment each year toward reducing the principal.

As soon as the construction of the house began, it was necessary to secure a fire-insurance policy. This involved a study of property insurance. The amount wanted was determined, the rate ascertained, and the premium computed.

Since the pupil had gone into debt, he was urged to protect his family by taking out life insurance. The amount was left to each pupil, but in no case was it less than the amount of his indebtedness. This insured that, in case of his death, his family would have the property free from debt. The different groups were assigned to investigate different companies. Reports were made on the New York Life, the Mutual Life of New York, and the Equitable. Only the simpler forms of policies were considered — the ordinary life, the twenty-payment life, and the twenty-year endowment. Most pupils took policies under the twenty-payment life plan. Although this work was necessarily made simple, there is no doubt

that the pupils appreciated the significance of life insurance both as a protection and as an investment. The completion of the house and the consequent moving in brought this line of work to a successful conclusion.

The teacher who has been handling this work gives abundant testimony to the fact that these problems, as taken up from time to time in the eighth grade, have been real and vital to the pupils. The pupil appreciates his situation. He is the man of the house. He has a family to support. He is building a home for himself and family. The home is planned very carefully. The house plans submitted have been a credit to the pupils. With scarcely an exception each pupil is very much interested in his plan. He wants so many rooms. He wants closets in certain places. He is interested in his neighbors. In brief, he becomes, for the time being, a citizen of the community, and as interested as any other citizen. There is little doubt in the minds of any one but that this work will carry over into later life with as much force as any other line of school work. Why should it not do so? It is real and vital to the pupil. When a pupil reaches maturity, he will certainly be influenced by the experience, and will more nearly act the citizen's part in the matter of providing a modern home for his family.

There are several interesting things about this work: First, the one day each week for four and one half months is ample time to cover the work very thoroughly. Second, this one day of each week upon practical problems has a wonderful reflex influence upon the regular routine and drill work of the other four days. Tests indicate that there has been steady improvement in the arithmetic work during the last three years, and that this improvement has been due not to more time spent upon

the work, but to greater interest on the part of the pupils; to better teaching, resulting from the attempt to motivate the work thoroughly and to adapt it to the community; to the fact that obsolete material has been eliminated from the work; to the fact that the drill work has been thoroughly systematized; and finally, to the automatic memory results secured in the mechanical phases of the work.

It will be seen from the above discussion that both the unity of the subject and systematic drill have been retained, and that, in fact, four fifths of the time is spent about as formerly. The other one fifth of the time is given to the specially motivated work, and it is left to the enthusiasm and skill of the teacher to see that the work of this one day thoroughly motivates the work of the five days.

Furnishing a six-room house. Note a second illustration of motivating the arithmetic work according to the above plan. In the sixth grade, a problem that has been successfully handled is that of furnishing a six-room house. The problem, as usually set, has been to furnish a house consisting of living-room, library, dining-room, kitchen, and two bedrooms, for a family of moderate means. The class then proceeds, taking one room at a time and furnishing it completely. If the dining-room is the problem for the next week, pupils will be expected to make inquiry as to the prices of dining-room chairs, dining-table, sideboard, buffet, etc. It is possible also that the carpeting of the dining-room and the blinds and curtains for the same would be included in the assignment. The better plan of handling questions like this, however, is to carpet the entire house as one assignment, and to buy blinds and curtains for the house as another assignment, the conclusions from these

general assignments being subject to modification in case later study should develop a different color scheme or a different plan for any particular room. At the time of the recitation upon the particular assignment, the facts as collected upon the different articles are presented, discussed, and the particular articles to be purchased, with prices, are agreed upon. These are carefully noted so as to be available for the final summary after the entire house has been worked over in this way.

This problem has been found well adapted to the sixth-grade pupils. It is not too difficult, it furnishes a great deal of variety, it appeals to the interest of the pupils, and it gives them opportunity to exercise judgment and discretion in the expenditure of money.

The point to be emphasized in connection with these illustrations is that they involve problems large enough to carry through a considerable period of time such as an entire half-year's work. In the same way some definite problem is selected for each grade, as, for instance, the following: —

Second Grade — Buying groceries and kitchen provisions.
Third Grade — Clothing, wearing apparel, dry goods.
Fourth Grade — Farm products, marketing, profits, etc.
Fifth Grade — Household furnishings.
Sixth Grade — Simple accounts; home expenditures.
Seventh Grade — Banking, business methods, saving, loaning, and investing money.
Eight B Grade — Investment in farm or residence property.
Eight A Grade — Figuring profits in different businesses.

The above plan avoids duplication, and gives each teacher an opportunity for a wide range of selection of some undertaking involving the particular material.

Organizing a stock company. A problem actually used and carried through a half-year in another school system was that of organizing a stock company to promote a

public enterprise much needed in the city. In beginning this work, the class appointed a committee to gather information from one of the factories in the city. The factory selected was a large furniture factory, chosen because of the extent of its business, the fact that it was successful, and the fact that to outward appearance it had a good organization.

The committee appointed by the class secured an interview with the president of the company. They met him by appointment, and spent half a day going into the details of his business. They had a definite plan for securing the information which they desired. The report as given to the class included the information thus secured and gave every evidence of being reasonably accurate. The items given were as follows: —

Sales for last year		$425,000
Expenses for last year: —		
Light, heat, and power	$7,000	
Insurance	2,500	
Pay-roll (38% of total)	145,000	
Advertising	3,500	
Transportation	10,000	
Losses (½% of total)	2,000	
Taxes	2,000	
Raw materials (44% of total)	170,000	
Incidentals	12,000	
Depreciation	10,000	
6% interest on capital of $310,000	18,600	$382,600
Profit		$42,400

This contact of school pupils with business men was a new experience and proved fully as enjoyable as it was helpful. The pupils were surprised to discover that such a large proportion of the expense — thirty-eight per cent — was paid out as wages to the workmen, and that this item and raw materials together constituted over eighty

per cent of the total expense. They were interested in figuring the per cent that each item of expense was of the total. They were surprised that the losses were so small, and that the profit was less than ten per cent on the total sales. The class decided, however, that they would be fully satisfied with a ten per cent net profit on the output of the factory which they proposed to organize.

The three members composing this committee were constantly appealed to for further information as the class proceeded with the work of organizing the Twentieth Century Cement Mixer Company. Such a company was being organized in the city, and a second committee was appointed to study in detail the plans of the organizers. They reported in a similar fashion to the class. When the class thought that they were prepared, they proceeded to organize their own company, determine the amount of common and preferred stock, and the amount of bonds to be issued. It may be interesting to note in this connection that the teacher having charge of the class gave some of the usual problems in stocks and bonds just preceding the beginning of this study. The class, as is experienced everywhere, were unable to comprehend the work or to take an interest in it. The work was purely mechanical and little understood. After the work in organizing this company had proceeded for some time, after the bonds and preferred and common stock had been sold, some of it at par, some above, and some below, after stock certificates had been designed by members of the class as a part of their work, then this teacher came back to the problems in stocks and bonds, as they appeared in the arithmetic. The difference in the attitude of the pupils and in their comprehension of the work was not surprising. It was to be expected. And yet it was the difference between dark-

ness and light. They now understood what it meant to invest in a four per cent bond at 83, and they were prepared to figure the income.

At another time the class in this room took up the organization of a street-railway company for the city in a similar way, the work being carried forward one day each week throughout the semester.

Occupational studies. Another teacher reports the use of the choosing of an occupation, or figuring profits in different lines of business, as a problem giving organic motivation to arithmetic work for half a year in the eighth grade.

The purpose of this line of applied work was to give each pupil an idea of the possibilities and the difficulties in different lines of business, in order that he might, perhaps, use the knowledge in the future as a guide in choosing an occupation. Many business failures are due, no doubt, to the fact that so many men take up a line of business about which they are not informed and for which they are not prepared or adapted. It has been estimated that at least ninety per cent of the business undertakings in this country end in failure. During the year 1908, Bradstreet's reported 15,066 business failures in the United States, with total liabilities of $296,298,-200. Discussing these failures, Bradstreet's presented an interesting study of the causes of failure. This year, as formerly, investigations proved that "tendencies present within the individual himself are largely responsible for four fifths of all business failures, and only one fifth are due to extraneous conditions over which the individual has little, if any, control."

Bradstreet's named eight leading specific causes for failures that are due to the individuals themselves and three which are due to extraneous circumstances. The

eight are: *incompetency, inexperience, lack of capital, unwise granting of credit, outside speculation, neglect of business, personal extravagance, fraudulent disposition of property.* The three causes due to conditions outside the individual are *specific conditions, failure of others,* and *competition.* Among the comments made by Bradstreet's appears the following:—

> In 1908 the eight factors first mentioned caused 77.5 per cent of all the failures, as against 81.1 per cent in 1907, and 79.7 per cent in 1906. The three influences beyond individual control accounted for 22.5 per cent of all the failures as against 18.9 per cent in 1907 and 20.3 per cent in 1906.

These figures show that the causes of business failure do not vary much from year to year.

The idea of occupational study having been worked out in general, the details were left to be developed by the class and were entirely satisfactory. A difficulty encountered was the reluctance of merchants to impart information, since they regarded many facts of their business as trade secrets. This point was difficult to manage and required a high type of tact and diplomacy. The merchants were finally convinced that they could do much to help the pupils and make the school work vital, and that no merchant would suffer in the least even if he gave the benefit of all of his trade secrets.

Following out their plan, the class studied the business of the grocer, butcher, hardware dealer, druggist, jeweler, plumber, lawyer, doctor, teacher, preacher, farmer, laborer, dry-goods merchant, clothier, shoe dealer, and furniture dealer. They asked for facts concerning the amount invested, operating expenses, losses, profits expected, sales per day, rapidity of change of stock, and general observations or advice to those considering such a line of business as an occupation.

Occupation	*Stock, and education*	*Rent*	*Heat*	*Light*	*Ice*	*Insurance*	*Pay-roll*	*Advertising*	*Delivery*	*Losses, breakage, waste, etc.*	*Bad sales*	*Drayage, express*	*Conventions, books, etc.*	*Telephone*	*Incidentals*	*Taxes*	*Total expenses*	*Sales per year*	*Per cent profits expected*	*Per cent profits (net)*	*Op. expenses to earnings or sales (per cent)*
Butcher	$500	$240	$15	$18	$180	$15	$1200	$20	$175	$10	..	$150	..	$22	$50	$10	$2595	$10,000	25	20.9	26
Clothier	20,000	900	300	400	..	200	5000	700	..	300	..	550	..	22	250	250	8872	50,000	30	..	18
Doctor	3,000	240	30	25	..	10	..	10	..	10	$150	10	$16	22	30	10	557	1,500	..	..	37
Druggist	13,000	540	100	180	30	178	1200	50	..	100	500	520	..	22	200	125	3745	48,000	45	33⅓	8
Dry-goods merchant	25,000	1400	400	240	..	500	4000	480	150	500	..	175	..	22	200	300	8367	43,820	15	..	18
Farmer	21,650	..	..	6	..	28	200	..	..	200	..	..	..	15	20	255	1066	2,600	..	..	18
Grocer	2,960	408	35	25	92	100	2158	100	280	45	92	250	..	22	50	60	3717	14,040	33	20	26
Hardware dealer	5,000	540	56	73	..	77	692	10	260	..	10	25	..	22	50	75	1890	15,600	..	..	12
Jeweler	10,000	625	35	155	..	250	925	200	..	25	275	150	..	22	50	150	2962	20,280	..	..	14
Lawyer	3,000	160	25	15	..	10	600	10	..	..	150	..	..	22	30	10	432	1,300	..	..	33⅓
Preacher	2,600	..	..	..	..	5	..	..	..	..	20	..	50	15	30	8	128	1,000	..	..	13
Plumber	500	250	30	36	..	15	1728	10	..	250	200	264	10	22	20	5	2740	8,000	..	..	34
Shoe dealer	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Teacher	2,600	..	..	..	..	..	..	..	..	..	..	..	160	15	15	5	195	800	..	..	25
Furniture dealer	9,000	540	20	35	..	50	650	100	200	50	..	60	..	22	50	135	1912	15,600	20	..	12
Laborer	100	..	..	..	..	..	..	..	..	..	..	..	..	..	10	1	11	600	..	..	2

The pupils were asked a week in advance to secure the material for the needed report. Volunteers were first called for because some pupils had unusual opportunities for securing data in a particular profession, or occupation. At least three pupils were asked to give reports in tabular form on each occupation, so that the results might represent an intelligent average.

The accompanying tabulated results shown on page 175 were finally secured.

This work brought to the pupils' attention facts which had hitherto been unnoticed, namely, the enormous pay-roll of the butcher, clothier, druggist, merchant, grocer, and plumber; the unavoidable losses of the clothier and merchant because of styles and of the farmer because of lack of marketing facilities; the alluring profits of each; and the underlying business principles common to all.

It is interesting to note how the work will vary from time to time, and how the pupils contributing will suggest different lines or different situations for carrying it forward. Different teachers have used successfully different plans for motivating their work. A certain teacher in the practice school used the following scheme during a recent summer session: —

The children of the fifth grade undertook the problems of clothing Mr. Jones's son and daughter; of furnishing staple groceries for his family; and of estimating the saving made by having their own vegetables and fruit. Required amounts were obtained from "mother," and prices from the grocer. Bills were rendered and receipted.

The sixth grade drew plans for Mr. Jones's six-room house and furnished it. They kept an accurate account of his income and expenditures and at the close of the work balanced it.

The seventh grade undertook the building of the house, paying of insurance and taxes and the borrowing of the neces-

sary money. Mr. Jones's check was given in the former case and his promissory note in the latter. The deed, abstract, and mortgage each received attention at the proper time, so that everything proceeded in a thoroughly businesslike manner. The information sought by the children was given in a most careful and courteous way by the citizens.

The school bank. Miss Adler, principal of Public School No. 77 of New York City, accomplished the motivation of her work through the establishment of a public-school bank. She reports most enthusiastically:—

The bank is a fund of motives. It was established by Mr. Mandelstam, a teacher of this school, and is a source of much pleasurable work for the classes. Its possibilities are being developed daily and I find new modes of using it constantly.

This organization is under the management of pupils. It accepts deposits and issues checks and notes. Deposit slips are made out by pupils.

In connection with the mathematics department of the school, the following operations were carried on: Interest computed; notes discounted; percentage found — all cases including finding the percentage, the base, rate, etc., by comparison of sums deposited with total sums in bank.

In lower grades pupils add amounts deposited.

The slips from the adding machine are clipped and given in parts to individual pupils. The total is computed by children, and then compared with total as given by adding machine.

Very small pupils make cylindrical packages of ten single cents, ten nickels, etc.

The introduction of the decimal point in the third year is taught by the use of deposit slips.

The foregoing are but a few of the practical applications of the "bank" to mathematics. From the economic standpoint, the following results have been obtained: —

Individual pupils have saved sufficient money to pay graduation expenses.

Parents have opened accounts through pupils.

Clothing and other necessary articles have been purchased by pupils.

Thanksgiving dinners have been furnished.

The bank has a full staff of officers, whose work is similar to the usual work of such officers in banks.

Excellent training in such work as may afterwards prove of practical value is thus afforded. Positions have already been offered by banking firms.

The idea of the school bank has been used successfully in high-school work. The head of the commercial department in the high school at Montclair, New Jersey, made the bank an integral and very valuable part of his commercial work. The bank was fully officered and received deposits, and even paid a higher rate of interest on deposits than was paid by the local savings bank. The result was a line of activity which thoroughly enlisted the interests of the high-school pupils. Some may think that high-school pupils are too mature to play at anything of this sort, but such is not the case, and the high-school teacher who cannot coöperate in such enterprises would doubtless do well to turn to other work, leaving the high-school work to individuals who at least are young in spirit. The play instinct should never quite die out. And it is certainly possible, even in high school, to conceive of an enterprise that is worth while from the standpoint of giving experience which is practical and which will later carry over into life in valuable forms.

The Francis W. Parker School furnishes a good example of motive in group activities. Each year the eighth grade has undertaken to do some big thing for the school. Last year the group decided to build on the playground a house which could be used by the smaller children for a playhouse, or by the school for some serious work. The construction proved to be quite an undertaking, the house being large enough for a good-sized classroom. The planning and construction of the

house were supervised by the eighth-grade room teacher and the manual-training teacher.

The project involved considerable good mathematics, correlated with the regular arithmetic course of the grade. Each pupil worked out a mechanical drawing of the plans for the building to a scale of one sixteenth of an inch to a foot. In laying out the foundation they discovered and used the Pythagorean theorem on the relation between the sides of a right triangle. Each pupil made a book about the house. This book contained tables for securing square corners and a complete bill of lumber for the house and other necessary material involved in its construction.

An undertaking of this extent will not be possible in every school, but with the introduction of manual training, similar projects on a smaller scale may be very properly undertaken in any school.

Comparison of courses of study. The carrying-out of a positive program such as is indicated above will necessitate the omission of some of the traditional topics from the arithmetic course. As early as 1904, Dr. Frank M. McMurry presented the theory of this omission before the National Department of Superintendents. He recommended the social-utility standard of selection, which demands the omission of all topics that are becoming obsolete, because better ideas and processes are taking their places, as well as of other topics which are so little used as not to justify the time spent by the student.

Five years after Dr. McMurry had given his standards, it was the privilege of one of the authors to make a study with a corps of teachers which indicated more or less how fully the standards set by Dr. McMurry were being carried into practice. The following summary of thirty-nine city courses of study shows that many of the

topics formerly receiving attention in the arithmetic work were being omitted entirely: —

GRADE OCCURRENCE OF ARITHMETIC TOPICS

(*From 39 courses*)

Subject	*Grades*							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Numeration	37	37	33	18	7	4	4	1
Notation	34	39	33	18	7	4	4	1
Relation of numbers	10	11	6	5	5	4	4	3
Addition	23	39	33	28	13	9	6	3
Subtraction	24	39	34	26	13	9	6	3
Multiplication	10	28	30	25	15	15	10	10
Division	2	16	21	34	27	25	19	17
Fractions	10	28	22	31	34	28	24	24
Denominate numbers	11	20	23	34	30	31	29	22
Involution and evolution					1	1	7	16
Decimal fractions				5	23	12	8	1
Mensuration	6	8	10	11	12	14	14	12
Multiplication tables	2	8	20	18	7	5	7	6
Commission and brokerage						10	11	6
Insurance						10	9	6
Percentage					7	16	13	8
Ratio and proportion				1	3	8	6	9
Partnership						2	7	4
Partial payments							3	5
G.C.D. and L.C.M.					4	6		
Longitude and time						4	7	1
Profit and loss						7	17	2
Taxes						2	14	3
Duties						1	13	1
Banking							9	6
Exchange							4	4
Simple interest				1	2	12	23	4
Stocks and bonds							6	8
Business forms					1	4	15	6
Simple accounts				3	6	5	3	3

The teachers who assisted in this study were much interested in the returns. It was evident that the doc-

trines preached by Dr. McMurry were being accepted by school superintendents throughout the country. It was not surprising, therefore, after a year's work, to have this committee of teachers make the following recommendations with reference to the course of study in arithmetic: —

On the basis of the business requirements of the large majority of the community, the following traditional subjects should be entirely eliminated, or attended to after the essentials have been mastered: —

1. Long method of Greatest Common Divisor.
2. Most of Least Common Multiple.
3. Long confusing problems in common fractions.
4. Long method of division of fractions. (Always invert and multiply instead.)
5. Complex and compound fractions.
6. Apothecaries' weight, troy weight, the furlong in long measure, the rood in square measure, drachm and quarter in avoirdupois weight, the surveyor's table, the table of folding paper, tables of foreign money, all reductions of more than two steps.
7. Most of longitude and time.
8. Cases in percentage. (Make one case by using x and the equation.)
9. True discount.
10. Most of compound and annual interest.
11. Partial payments, except the simplest.
12. Profit and loss as a separate topic.
13. Partnership.
14. Cube root.

The lines marked out by this study in 1909 were carried further in an exhaustive study reported at the meeting of the National Department of Superintendents at Richmond. It is surprising to find the general agreement throughout the United States upon the platform as originally laid down by Dr. McMurry and carried forward by progressive superintendents since that

time. It is common practice for the obsolete material to be put aside in favor of the newer, more vital, interest-arousing problems and present-day situations. This newer standard of motivated work requires that nothing shall be included which does not function in the life of a student in his relations to the community. The above negative discussion and enumeration of obsolete topics is deemed wise only by way of contrast.

Since we have now come to the view that the best discipline results from working with topics that contribute directly to the satisfaction of the child's interests, or which relate very closely to community activities, we are no longer justified in carrying the dead weight of obsolete material which we have previously carried for mere disciplinarian purposes.[1]

[1] The reader who desires to investigate the subject further will find abundant evidence in support of the progressive program in this chapter. See Bibliography, on pp. 253–56, for references.

CHAPTER X

THE MOTIVATION OF OTHER SUBJECTS

In the preceding chapters, the motivation of writing, spelling, music, drawing, nature-study, agriculture, manual training, and home economics has been touched upon in connection with the motivation of other subjects and also in the general chapters. The importance of these subjects, however, requires that they receive at least brief individual treatment.

The motivation of writing. Aside from the interest in repetition in practice and the mastery of a new art, the chief reason for the wish to write well is the social value of writing. It enables children to share their experiences with absent friends, to make their wishes and needs known to those who can help them, and to enjoy a new medium of self-expression. Teachers who wish to motivate the writing lessons of the school not only seek to make the exercises themselves vital and interesting, but likewise to have the children see that they may gain certain definite ends if they have the ability to write.

For example, if the class wishes to order something from a firm of merchants, or to make a request of some prominent official, it is made clear to the pupils that the letter chosen for sending must be one of the most neatly and legibly written. If invitations to some school function are being written, only those children who are improving in their writing and who do neat, careful work may help write the invitations. If an exhibit of the best work of the room is being prepared, one require-

ment of all papers included is that they must be well written. Often the writing-lesson is used in writing something which the children are preparing for some definite end. Neat, careful writing is important, if the desired result is to be obtained.

In all of these, and in many other ways known to the ingenious teacher, an impelling desire to master the art of writing is developed in the members of the class, with the result that the writing period is not a meaningless, laborious drill to be endured, but an exercise for which the children are eager because it helps them to secure some equipment they feel they need.

The Thorndike scale [1] may be used in the writing-work in such manner as to enable the pupil to satisfy his instinct for competition or his instinct for "doing things." There is considerable evidence that this may be done very effectively in the writing-work of the school. The boy or girl who has been accustomed to a grade of 70 or 80 in writing from the first grade up to the eighth grade very properly may have reached the conclusion that it is "all humbug anyway." He is certainly writing better than he did in the second grade, — or it may be that he is writing worse than he did in the sixth grade, — and yet he gets a grade of 70 or 80, or thereabouts, month after month and year after year. The situation is immediately changed, however, when the Thorndike scale is put before him and he is taught to apply his own writing to the scale in order to see the value which should be placed upon it. When the standard is properly presented to him, he is immediately inspired with the determination to climb that scale and to

[1] In some respects the Ayres scale for measuring handwriting is easier to use, as it presents three degrees of slant in the specimens of each quality.

bring his writing to a higher standard. It is no longer a matter of opinion on the part of a teacher, or lack of opinion, as the case may be. The pupil is in a position to determine for himself his grade in writing independently of the teacher's judgment. He can do this as often as he likes. He can take his written work daily to the scale and make the application. He may be taught also to have ideas with reference to legibility of writing, the necessity of a good legible hand in order to carry on business transactions properly, and the need of care on his part in order to hold the standard in writing which he has attained.

The writing scale may be used even with more advanced students with equal effect. A class of seventy-four summer session students at the Iowa State College were measured by the Thorndike scale at the beginning of the six weeks' work. They showed a range in ability from 7 to 16 on the Thorndike scale, the median falling at quality 11, or about sixty per cent by the old method of grading. At the end of the six weeks all but two had passed the original median ability of the class, and the class as a whole (as shown by median) had advanced from quality 11 to quality 16. Twenty of the group were graded quality 18, or one hundred per cent on the old basis. Not only did the class make this improvement, but they took great interest in using the scale and noting their own advancement. It became in the case of each student not a question of competing with the class, but of competing with himself. This is a form of competition which is entirely commendable and which has none of the objectionable features of class competition.

Under the guidance of the instructor the group was directed in the making of a simplified writing scale. This consisted of a scale of eight qualities or steps, and

was designed for use with summer session students, prospective teachers. It is a scale [1] that could be used in the upper grades. The purpose in making the scale, however, was to enable the teachers more fully to understand the scale, to appreciate its uses, and to lead them to desire to make a simplified scale for use with their own children. Superintendent Bliss, of the Montclair schools, has found that a scale made from the writing of pupils makes a stronger appeal than either the Thorndike or Ayres scale. The pupil's own scale enables him to compare himself more easily and fully with himself.

It may not be out of place at this time to suggest the use of judgment and intelligence in the writing-work. The purpose of writing is either to make a record for the pupil's own personal advantage or to communicate with others. A pupil may record rapidly and in a hand that is much below the quality which he is willing to submit to his friends. In this record for his own use he may even use the finger movement; he may write under conditions that do not permit of correct form, and yet he is accomplishing his purpose. But when he begins to prepare a letter to mail, a report to be submitted to his teachers, or material which is to come under the view of others, it is worth while that he should meet standard conditions and show a quality of writing which commends him to his fellows. Democracy in education requires that we more and more make use of judgment and common sense in dealing with our pupils.

An extended study of the quality of writing which capable, intelligent, mature people use in business and in life shows the futility of insisting upon artificial standards in writing, and the necessity of using good

[1] Dr. Ayres's scale for judging the handwriting of adults is an excellent device for use with older students.

judgment as to where high standards must be insisted upon. The writer has been pursuing such a study for several years, and has applied the Thorndike scale to the ordinary writing of teachers at teachers' institutes, of graduate students in Columbia University, of applicants for positions through the Social Service Bureau of New York City, of inquiries addressed to this same bureau by society leaders and business managers and others employing personal service, of signatures to bank checks, and of the writing of undergraduate college students. In all of these studies, the median for a group seldom rises above quality 10 of the Thorndike scale. The best quality of writing was shown by applicants for positions. They know that the success of their application may depend upon the writing, and so they return to their best schoolroom style. All other classes, with individual exceptions in each direction, write a quality [1] that is only reasonably legible and that lends itself to speed.

Teachers should at least keep in mind the limitations

[1] Many educators will agree with Dr. Thorndike that where a high degree of neatness and legibility is required, the typewriter should be used to secure the required results. It is interesting to note in this connection an article in the current number of the *Breeders' Gazette* (November 19, 1914), entitled "Typewriting Machines on the Farm." The prediction is made that in a short time the use of the typewriter on the farm will be almost universal. Many will be inclined to doubt the correctness of this prophecy, but no one doubts the educational value of the typewriter in leading to greater precision and accuracy, and many will agree that for these reasons alone its use is bound to increase.

A recent report is made of a father who purchased a typewriter for the family as an educational investment. The father dictated all his important letters to his oldest child and she learned to take them easily. He did not buy the typewriter because he thought that the children would ever need to use it as a means of gaining their livelihood, but as a means of education whereby his three children, aged eleven, thirteen, and seventeen respectively, might learn a proper use of English, clearness in expression, correct spelling, capitalization, punctuation, paragraphing, and all forms needed in business letters.

of handwriting, should use judgment in their requirements, and should seek more and more to furnish proper motives for a reasonably high quality of writing.

The motivation of spelling. A great many children like to spell. They enjoy the repetition involved and the victories achieved. For them, other motives are not seriously needed, although their enthusiasm and determination are certainly increased under such stimuli. For others, motives must be supplied.

The fundamental reason for learning to spell words is that the student may be able to write them accurately in any record he may wish to keep or any communication he may wish to make. Through the records and communications necessary in school work, the skillful teacher finds an abundance of ways to motivate spelling. Correct records in gardening, in weather observation, or in industrial arts cannot be made unless the children know how to spell the words they need to use. They cannot write their experiences on an excursion unless they can spell the words necessary to describe the trip. If the school is preparing a letter of inquiry, a request, or a business letter addressed to persons outside the school, only those letters which are correct in spelling can be sent. Only work in which the spelling is correct may be included in an exhibit of good school work.

All of these reasons and many others impress on children the need of learning to spell. They grow eager to become good spellers, find the spelling work pleasurable, and produce results much more accurate than those secured when the spelling assignments seem merely imposed tasks.

The true test of spelling work is the ability of each child to spell his own vocabulary in his written work. Therefore, the problem of greatest importance is to

motivate successfully for each child the mastery of those words which are difficult for him. Most children of normal ability find it easy to learn to spell nearly all words in their ordinary speaking and writing vocabularies. There is, however, a certain small percentage of troublesome words, of which *believe* and *receive* are typical. The careful teacher finds ways of focusing the attention of each child upon just those words which are particularly difficult for him. Some teachers have each child keep a list of such words, allowing each word to be struck off as soon as it ceases to appear incorrectly spelled in his written work. This game of keeping a "minimum list" is fascinating to children, and furnishes sufficient stimulus to produce the desired result. These lists are of great help to the teacher in planning her spelling tests.

Obviously the standard of requiring pupils to spell correctly only their writing vocabularies greatly limits the amount of spelling work necessary. The writing vocabulary of children is much less than their reading vocabulary — in fact, there are indications that it is not over one fourth as large. Yet many teachers have made the mistake of using the pupils' reading-vocabulary as the basis of spelling work. Many have gone even further, taking from the spelling-book and spelling-lists words which were not even understood by the pupil. This is clearly a waste of time. A study by Dr. Ayres has shown the futility of learning to spell words for an indefinite possible future use.[1] There is considerable evidence that vocabularies decrease rather than increas(after pupils leave school, and that work in preparation for the future is entirely wasted.

At any rate, there is enough to do at the present time.

[1] L. P. Ayres, *Spelling Vocabularies of Personal and Business Letters.*

Nobody questions that the pupil needs to learn to spell his own vocabulary, or that he needs to find out early just what words he is misspelling. He needs to keep a regular spelling-list of his own misspelled words. Even the boy or girl in the grades can see that time spent on this list is not wasted. He has the evidence before him again and again that if he is to succeed in his school work now, he must learn to spell certain words.

Dr. Jones has shown us that nine tenths of all misspelled words occur in the second- and third-grade vocabularies. Poor spelling has resulted from our failure to correct the misspelled words in these vocabularies. Very foolishly we have made the child spend his time upon words which he will never use — words which he does not even understand — in the hope that by this process we should correct the spelling of such words as *which, their, there, separate, been, until,* etc. When the pupil has his own problem squarely before him, he is willing to attack it and throw his entire force into the undertaking. This is an opportunity for achievement and combat and he welcomes it.

The motivation of music. For most children, music is an enjoyable subject of study. It is entered into with great enthusiasm. Yet how much more definitely this enthusiasm works if the children are striving to master their music not only because they like it, but because they have definite uses for it. What teacher has not noticed a new enthusiasm among her pupils during the music lessons when the class begins to develop some good songs for use on a public occasion. The use to which they are to be put gives point to the effort. It raises the standard of perfection the children wish to attain and it fires them with new zeal and firmer determination.

A large variety of needs for singing are ever present to the teacher who is alert to seize on occasions for using the singing ability of her children. They will be called upon to take part in the school assembly programs if the principal has heard them singing well some appropriate songs. If the children invite their parents to visit the schoolroom, a motive is provided for good singing both in their regular work and in the music rendered when a special program is provided. Conventions meeting in the city are often glad to have music furnished by children. Christmas, Easter, and Memorial Day offer many opportunities for singing.

There is a growing practice of presenting at some time during the school year a formal and ambitious program growing out of the regular music work of the schools. The following announcement quoted from the Portland, Oregon, *School Bulletin* of November 13, 1914, is typical:

> Arrangements have been made for a series of entertainments at the following high schools on the dates named: Washington, Friday evening, November 20th; Lincoln, Friday evening, December 4th; Jefferson, Friday evening, December 11th. The programs will consist of choruses and orchestra numbers by the school, a solo or two by pupils, and singing of old familiar songs by the audience.

Perhaps the larger cities have presented such programs more frequently than have the smaller cities and towns; perhaps, also, these efforts have been too closely confined to students of the high schools. Where good music is provided, children of all grades may help in the development of these more extensive programs for presentation before the public. In one small city, the school music festival has developed until it is one of the most important entertainment features of the year for the entire community.

In the small community of Winfield, Kansas, since 1912 the schools have given a series of musical programs in which the high-school chorus and the Winfield Orchestral Club combine. Originally they were projected as a means of motivating the work of these two organizations. So well were their efforts received that the scope of their work has been extended, and the teaching of dramatics in the public schools under competent instruction has been established.

One of the interesting features in connection with this work was the publication of two pamphlets announcing these musical programs and giving the fundamental ideas in the minds of those responsible for the development of the work. Mr. Edward B. Gordon, the director, says in a letter, "A careful survey of the programs will reveal the fact that every selection has had behind the choice some definite purpose."

The program for the season of 1913–14 was designed to give a historical perspective for the study of music. It was as follows: —

PROGRAM

Hymn to the Muse	Grecian	about 500 B.C.
Early Christian Hymn	St. Ambrose	400 A.D.
Hymn — one of the early attempts at harmony		900
Sumer is icumen in — first English secular composition		1240
Ein feste Burg — Luther's great Reformation hymn		1483
Latona, lovely maiden	Lassus	1520
When flowery meadows	Palestrina	1590
Intermission		
Adagio from Violin Sonata, Op. 1	Corelli	1653
Loure from 3d Suite for Violoncello	Bach	1685

Theme and variations from Kaiser Quartet	Haydn	1732
Celebrated minuet	Boccherini	1743
Romance in G, Op. 40, for violin	Beethoven	1770
Minuet Bridal Chorus } from *Lohengrin* Vorspiel	Wagner	1813

Accompanying this program were five pages of notes carefully prepared by the director to show the three periods in the development of the art of music which the program was designed to illustrate. The notes were written in a clear and simple form designed to aid even a novice in appreciating the program presented.

The second program of that year was especially designed for the entertainment of the children of the first four grades in the elementary schools. Programs three and four were orchestral programs, the fifth was a choral program, and the sixth a children's program given by four hundred children from the grade schools, supported by the Winfield Orchestral Club.

Eight concerts were given the next year, opening with the presentation of an Old-English mystery play, intended to give perspective to the study of the drama. The previous year's standard of variety and excellence was maintained in the series of programs offered. The director's letter emphasized the point that the young people taking part in these programs felt it a high privilege to contribute their talent to the community life. As a result of their entertainments, they not only gained a great deal in musical enjoyment and appreciation themselves, but developed a taste in their audiences for the class of music which they offered. The net proceeds of these programs were used to purchase reference books on music for the public library and a number of orchestral instruments which were presented to the public-

school system to be used by students unable to buy their own instruments.

The motivation of drawing. The many mediums employed, the fascination of using color, the chance for originality and invention make drawing a delightful subject to most children. To these sources of immediate interest must be added the great variety of uses to which drawing may be put. For example, if the children make portfolios in the manual-training class, an interesting problem in design and lettering is at once created by the need for decorating and labeling the front covers. Likewise, if booklets embodying results from nature-study, history, or composition are made, many pleasant lessons in drawing result. Designs for the covers must be developed and executed, the titles of the booklets must be lettered, and illustrative drawings may be added.

From time to time through the year need arises for programs and announcements, which may be designed and lettered more or less elaborately. Parents' meetings, school parties, public performances of plays or concerts all require such productions. Posters may be made announcing entertainments, and such events as football, basket-ball, and athletic field days. Christmas and birthday presents may be made with the aid of pencil and brush. In making such gifts manual training and artistic ability often are united to produce attractively designed tiles, book-racks, trays, and the like.

One supervisor of drawing enlisted the children in the work of making and illustrating an art booklet of considerable extent. The pupils designed the cover, designed and illuminated initial letters for the chapters, colored outline pictures, and painted special illustrations. This was in addition to composing the body of the book-

let, which consisted of chapters on the beauty and color effects of each school month.

A class in design in the Washington Irving High School of New York City competed for *Ladies' Home Journal* prizes; another found an absorbing problem in an attempt to fill an order for an advertising design to be used by a shoe manufacturer. In another community, on completion of a new high-school building the students of the art department consulted with the architect and developed a plan for planting the grounds with shrubbery. The board of education made it possible to execute this plan and it was turned over to the students of botany and agriculture, who did the planting.

There is evidence that art, or drawing, is becoming more and more a useful help in other subjects. This is surely one of the easiest and most natural sources of motive. In some colleges the art work is subordinated to the home economics department, and is used only as applied decoration and design. The wise grade teacher constantly uses art in illustrating or amplifying work developed in other subjects. Without such correlation, art is frequently a joy only to the gifted artistic child. With it, the ordinary child sees its value, and other subjects supply the ideas and the plans. With these furnished, he is able to apply art media in serviceable and sensible ways.

The use of art work in high-school classes is well illustrated in the experience of Miss Floy Campbell, formerly art teacher in the Manual Training High School of Kansas City. The art knowledge and ability of pupils was applied to the designing, decorating, and furnishing of a house.

The first requirement was that all students should send for as many catalogues as possible from first-class dealers in

building material, furniture, etc. They collected and studied house plans until they could read them easily. They visited a new addition on the outskirts of town. Each student selected in this addition his own lot, interviewing the agent to find what the restrictions were, what the cost would be and the probable price of improvements still to be made. Each student then selected or originated his house plan, making it suitable for his lot and exposure. He then drew the plan of the lot with the house properly placed, added trees, shrubbery, and garden, and finally drew a colored picture of the house in the garden. Neighborhood harmony, community planning, etc., were discussed during this part of the study. Forest Hills Gardens, Roland Park, and beautiful portions of our own city served as models.

By this time the catalogues had arrived. Samples of wood stain, paints, wall-papers, etc., had also arrived. Experts from our best stores gave the class illustrated lectures on rugs and other floor coverings. The student now cut and mounted samples of paper, wood, curtain material, and rugs to represent the color arrangement of each room in the house. One or two of the rooms were then drawn in perspective and colored. Furniture was selected from the stores or from catalogues for each room. Pictures were discussed, cheap but good methods of reproduction being especially studied. Finally, sofa pillows and all details of house furnishing came in for their share of attention. Original designs were generally made for these, and, when possible, carried out by the student as well. One or two of the houses planned were actually built every year.

With smaller pupils the plan can be best carried out by actually building a miniature house. This makes a good coöperative art and manual-training problem. An open five-room house plan was made by the third- and fourth-grade pupils of a summer session observation school. In this case rugs were woven, curtains made, bath tub moulded, furniture constructed; in fact, all work necessary to complete the model was done by the pupils under the direction of a single teacher. It is a good illustration of the coördination of school activities that even the

arithmetic work was used in the undertaking. All models were constructed to scale, and the final result was exhibited by the pupils with proper pride. The house plan as developed in chapter IX could easily have been made the basis for some practical art work, and would have been so used except for other enterprises at that time under way by the art teacher.

The motivation of home economics. The work in home economics in our schools has been unusually fortunate and for the most part has escaped the formalizing process which has been experienced by drawing, music, and manual training. The present tendency is to place home economics in the schools as low as the fifth grade and to give the work to boys and girls alike for at least two years. The subject deals with problems that are of interest in every home and reduces home management to a rational basis. The work itself satisfies the instinct for manipulation and construction.

In one school the fifth-grade work in home economics was correlated with the American pioneer history work as outlined for this grade. While the work was broadly informational, it gave plenty of opportunity for interesting projects. For instance, methods of cooking were studied — use of hot stones, hot ashes, open fireplace, and ovens. These were accompanied by exercises in grinding corn, baking with hot stones, drying corn and apples, making soap, and dipping candles. The children were so interested in the work at school that most of them dipped candles at home, and the exercises in soap-making offered an interest and satisfaction which can scarcely be realized by older people. The children then modeled a log cabin and secured part of a fleece of wool which they intended to wash and comb and which later they expected to spin, weave, and dye. By this

method the children have valuable exercises in food, shelter, and clothing, and get them in a form which gives a historical background that in itself is most valuable.

In this same school the sixth-grade pupils make a sewing project out of their cooking-uniforms. Each girl makes for herself a cap, an apron, and a holder. No formal exercises in sewing are planned. Every stitch is used in making something which the girls expect to wear, or in dressing a doll, planning a Christmas present, or making some useful article for the home.

This idea has been carried out in many high schools through the recommendation that the members of the senior class make their own graduating dresses. This type of exercise not only furnishes motive, but it has by-product values which are significant from the school and home standpoint. The use of the home-economics department in planning menus, serving banquets, and decorating schoolrooms has become very common. In places this is extended to the decorating of homes and the girls are particularly encouraged to rearrange and if possible redecorate and even refurnish their own rooms. Superintendent Condon, in his "home school" at Providence, Rhode Island,[1] has shown us a type of work that is not only worth while for the girl in the factory, but is becoming more and more common in the regular high-school work. More and more the school board is willing to provide a house for the home-economics department with opportunities to work in the kitchen, in the dining-room, and in the bedroom — in short, to carry on all phases of home work, including care and management as well as furnishing and cleaning. It is this type of work which we need to encourage by every possible means. It is the best assurance that our home-economics work is

[1] Ada Wilson Trowbridge, *The Home Life School.*

doing good in the community and that it is satisfying the demands of childhood as well as the demands of school work.

The work in home economics in the rural schools finds its center and motive in the hot dish to be prepared for the noonday lunch. Pupils and patrons alike enjoy the hot dish, but as a teaching center it serves many purposes in addition to this. There is the opportunity of teaching the use of the napkin, proper laying-out of the lunch, proper serving of the hot dish, correct deportment — in fact, all of the opportunities which the mother and father have at home are given the teacher, because of the fact that she is, in a way, furnishing part of the lunch and assumes the responsibility of organizing and directing it. Even sanitation is included — washing the hands before the meal, and, possibly, using the toothbrush afterward.

This particular form of giving motive to the work in home economics is widely recognized. It is now the basis of work for rural teachers in the summer session at Manhattan, Kansas, and at Ames, Iowa. It is made the basis of a bulletin in Oregon and in Maryland. It has its limitations, but in the rural schools not much home economics can be taught directly, and this seems to be the most reasonable method of procedure.

The organization of the lunch around a particular hot dish involves the planning of the entire lunch for the pupils. The meal must be properly balanced. If starch food is furnished in the hot dish, — as, for instance, by preparing baked potatoes or tapioca pudding, — then the pupils must bring in their lunch food that will furnish the other necessary food elements. This becomes a definite problem with almost every variation in the dish furnished at school. In this way pupils learn why

it is that they should not have in the same meal rice, fried potatoes, and cornbread. In the South, the desirability of this kind of instruction has been brought strongly to the attention of people because of the discovery that the dreaded disease pellagra is due to the one-food diet, and the further discovery that the disease may be cured by proper variation of the diet. While the lesson is not so strong in all parts of the country, it is a generally recognized fact that a varied diet is necessary to proper nutrition, and there is no better way of teaching this than the practical one of planning with the pupils the proper make-up of the balanced noon lunch. This work has been found to carry a great deal of interest in that it involves the preparation and active manipulation of materials. This appeals to the activities of children. Boys as well as girls participate, taking their turn at operating the stove and preparing the food or washing the utensils.

The motivation of manual training. All types of normal children enjoy working with tools and employing materials in construction. The double source of motivation — interest in invention and construction, and desire to possess the finished product — urges most manual-training pupils to apply themselves wholeheartedly to their work.

Moreover, from the first grade up through the eighth, there are abundant opportunities for coöperative work, which adds other secondary motives. A common eighth-grade problem is the making of a miniature house for the use of first-grade children, who enjoy planning and making the furniture for the house in their construction lessons. Such a house usually contains a kitchen, dining-room, living-room, and bedroom, and may be much more elaborate. A large number of interesting problems are

presented in making the stove, tables, chairs, bookcases, etc. In the intermediate grades various fittings for the teacher's desk or the principal's office may be made, such as baskets for pens and pencils, small waste-baskets, rugs, or couch covers. In the upper grades successive classes often contribute pieces of furniture needed in furnishing a rest-room or office, or rendering a corridor attractive. These needs result in the making of such articles of furniture as library tables, taborets, bookcases, davenports, chairs, etc.

In a certain Middle Western high school, a teacher of domestic art reports that her classes completed the following problems in one year: making the necessary table linen for the domestic-science department; six infant outfits for the school nurse; bean-bags for the use of the physical-training department; the curtain or screen required as part of the moving-picture equipment for the high-school auditorium; costumes for the "fireflies" in a little dramatization of *Hiawatha;* costumes for the English department in presenting dramatizations of the *Canterbury Tales* and *As You Like It;* and costumes for the use of the German department in presenting the dramatization of *William Tell.* This report is typical of the problems developed in domestic-art courses in good high schools.

One of the best illustrations of vitalizing the manual-training work of the students and motivating the community's interest in and support of it comes from a small city in Montana.[1]

Manual training was started in this community by the appointment of a wide-awake, well-equipped teacher, who was given a small supply of tools. With these and

[1] Supplied by Mr. William Stewart, teacher of manual training, Townsend, Montana.

some rough lumber, by the aid of the boys who came into the class, two long carpenter's benches were made. Soon five smaller benches, with the necessary bench-hooks, were produced by the boys. Then they made a tool-case and the necessary racks for hanging their tools. Next in order, the instructor turned his attention to finding out the character of problem each boy would like to work upon. Soon some of the boys had produced whisk-broom racks, footstools, and small taborets. A little display of their work in the show-window of a downtown store resulted in opening up a large number of new problems for the boys, resulting in motivating their work in a remarkable way. A number of people who needed the services of a carpenter naturally turned to these boys in the manual-training department of the public schools for the work they needed done. A shoe dealer, who needed some racks for his show-window upon which to display the various styles of shoes, placed an order for sixteen racks. After the boys had completed the order and paid for the necessary materials, they had a profit of $3.50 to divide among themselves. By the time this work was completed, one of the moving-picture shows, having learned where the shoe dealer secured his display racks, placed an order for enough music-racks to accommodate the orchestra, and this order was soon filled at a profit of $2.50. A florist also placed an order for a small number of taborets for use in his place of business and in his show-window, which order was duly filled with a small profit. Then an ice-cream parlor placed an order for a number of four-leaf silk-filled screens. This work was satisfactorily delivered, also with a small profit to the boys participating. A number of these boys brought from home certain pieces of work which needed to be done. One repaired

a washstand; another made a frame for a looking-glass and mounted it upon the dresser; another brought a small chair and repaired it. All of these problems presented themselves during the first year of the school's existence and the teacher in charge states that sufficient similar problems are continuing to present themselves, with the result that the boys are eagerly enthusiastic about their work.

Superintendent Meek, of Boise, Idaho, reports that during one summer thirty boys were employed in completing the wiring of the Boise High School under the direction of the manual-training teacher. Boys from this same department also laid cement walks, made cement posts, did the necessary cementing in a large dairy barn, drew the plans and wrote the specifications for a two-hundred-thousand dollar building which was planned in the drawing department, sprayed the orchards near Boise, and applied the tuberculin test to cows under the direction of the teacher of agriculture, who was an expert dairyman and educated farmer.

One of the largest coöperative problems ever undertaken by high-school pupils was that executed by the pupils in the high schools of Oregon, making all the furniture for the Oregon Building at the Panama-Pacific Exposition from plans and specifications likewise made by Oregon high-school students. The furniture for all of the five rooms of the Fair Commissioners, the governor's reception-room, the general reception-room, and the dining-room were made by high-school pupils. The undertaking was planned in such a way that each high school of the State participated, each school being assigned a certain number of pieces to construct.

The climax of turning the services of the manual-

training students into practical and useful lines has been realized in a number of places in the United States this year through the efforts that are being made to relieve the needy and distressed condition of the Belgians. In the schools of Denver, for example, the children in the upper grades of the elementary schools were given a choice between making clothing for themselves or a warm garment for some poor little homeless child among the refugees of Europe. The opportunity thus opened met with a hearty response from the parents, teachers, and pupils. The result is that twenty-seven hundred warm, comfortable garments were made before the first relief ship was sent over.

The foregoing types of work not only produce worthwhile results in turning out useful products, but they call out the largest initiative in pupils and afford the finest possible means for the unfolding of personality. Not all manual-training work rises to the level of common sense and interest of that set forth above. There is much evidence, however, that our best teachers do use manual training wisely, making it serve in promoting the development of children in larger ways.

The following illustrations set forth in greater detail than any of the foregoing, the steps in the development of a large manual-training problem. They also show clearly the large variety of interesting, profitable problems involved in the working-out of a large project. The first is a report from the teacher of the first four grades in a summer session model school. The enthusiasm of the children and the tangible results secured are strong evidence that manual-training work that is worth while can be done even in the lower grades.

Plan for the construction of a house

Before making a plan for their house the children discussed the different kinds of building materials and the advantages of each. The discussion led to the decision that we could make ours out of wood best. They discussed the number of rooms for it and decided to have five; library, dining-room, bedroom, kitchen, and bath. They then looked in different papers and magazines for house plans to see how they were drawn, noting the arrangement of the rooms. A number of original plans were placed on the board and discussed by the class and suggestions and changes were made until our final plan was complete. The scale for both house and furniture was one inch to the foot. A list of the pieces of furniture needed was made and each child was responsible for actually measuring certain pieces of furniture at home. The boys took these measurements and made drawings for their furniture. The pieces made were: chairs; library, dining and kitchen tables; bed; dresser; china closet; grandfather clock; davenport; bookcase; library chair; stove, and kitchen cabinet. From clay they made a bathtub, lavatory, and kitchen sink.

The girls planned the curtains and linens needed and these were made in the sewing-room. They made curtains for the windows, bed and table linen, pillows, cushions, mattresses, table-runner, dresser scarf, and towels.

The boys made 9 x 13 looms on which to weave the rugs. The rugs were made from carpet warp.

The children selected and brought wall-paper from home to paper the walls. The outside of the house was painted white. Heavy wire was used for curtain rods and screw eyes for fixtures. The curtains were hung, rugs laid, and furniture arranged by a committee appointed from the room.

This problem should have longer than six weeks for its solution. If there had been time, I should have taken up in some detail the work of the different workmen needed to build a house; e.g., carpenter, mason, plumber, plasterer, painter, tinner, paper-hanger, etc. Baseboards, door and window facings should have been made; also doors made and hung. The children should have made the wall-paper, working out their own designs in water-color or crayola; also they should have made and framed pictures for the walls.

The second illustration is from the principal of the consolidated school at Rollo, Illinois. This article emphasizes strongly the necessity of using good judgment in adapting the manual-training work to local conditions and to the interests of the children. So adapted, the work is inspiring and offers large possibilities.

Manual-training problems growing out of farming [1]

In the work which relates more closely to the farm the boys worked out a new idea for a box in which to test seed corn. Each boy built his own box, took it home, and tested his father's seed corn. The corn crop this year in this community speaks for the value of such work.

Milk-stools in great variety have been made and taken home, where they are still in use. One industrious boy made a brooder, and proudly took it home, where it is soon to start on its second year of usefulness. Another boy worked out an ingenious turkey-trough. It is so perfectly adapted to its specific purpose that turkeys may eat and drink from it, while chickens cannot. Pig-troughs were made by practically all the boys, and it has been reported that feeding the pigs has taken on a new interest.

An interesting case was that of one boy who carefully planned and made a martin-box. The plan, in some way, suggested a new style of pigpen to him. He planned and built a pigpen which has attracted considerable attention among those who keep and raise hogs. Led on by this success, the same young man has planned a new poultry-house which he will build this winter.

These problems, let it be understood, come up in connection with studies which have to do with these particular phases of farm life. As an illustration, in the animal husbandry class, the matter of a general-purpose barn was under discussion. The class visited various barns in the community and studied them in the light of the demands made upon them. Then each boy planned his ideal general-purpose barn. The plans were discussed in the class, and finally a composite plan for a model general-purpose barn was evolved. Accurate drawings were

[1] Reported in the *Industrial Arts Magazine* (January, 1914).

made to scale, and a complete list of lumber and materials for the full-size barn was made and the cost carefully estimated. It was then decided to build the model barn in miniature, but to make all dimensions exactly to scale. This was done.

In a short time a barn in the neighborhood was burned to the ground, having been struck by lightning. The son of the owner was one of the boys who built the model barn at school. He proposed to his father to plan and build a new barn. So, with his experience in working with the model barn, he was able to make complete plans and drawings for a barn to suit the specific requirements of his father's farm. This, of course, was different in many respects from the model barn. The boy made a list of materials, estimated the cost, and with his father, who is not a carpenter, built the barn. Another boy from the same class is now making plans for a new barn on his father's farm, and work will soon begin on the construction of it.

The result is that, after scores of practical demonstrations of the ability of the boys to do independent thinking and skillful work, the people are inclined to feel that what the boys are doing in school is really worth while. They believe that along with the regular school work the boys are doing something that makes them more interested and efficient workers in the home and on the farm. And when they believe this of our school, we have hope and evidence that their respect and their interest are strongly drawn toward it.

The third illustration[1] shows a large variety of interesting problems needing solution which were derived from an entirely different source from the other problems discussed. This opportunity arose out of the provision of a vacant room next to the domestic-science kitchen for a dining-room.

The question naturally arose: "How shall this room be furnished?" The answer came with one accord from those immediately interested: "Have our boys and girls make the

[1] Supplied by Philip S. Hasty, Director of Manual and Industrial Arts, Topeka, Kansas, from his experience in the Newman Manual-Training School, New Orleans, Louisiana.

things which are necessary, so far as lies in their power, so that the room, when completed, will be convenient, artistic, and beautiful; so that it will be a permanent exhibit of what may be accomplished through a union of the arts and crafts and through enthusiastic and hearty coöperation between pupils and teacher."

The first ten weeks of the school year were spent by the boys of the first- and second-year high-school classes in the work of designing. A study of the room was made, and the effect of its size, shape, and arrangement upon the character and disposition of the furniture was determined.

The following pieces were decided upon: —

Six side chairs; two armchairs; one extension table, not to exceed 12½ feet when open; one sideboard with china cabinet above — cabinet to be fitted with leaded glass doors (width of sideboard determined by width of space set apart for it); two serving-tables with cabinet below (doors to match those of china cabinet above large sideboard — width of these pieces also determined by the positions in which they were to stand).

Material: Quarter-sawed oak.

Style: Mission.

Finish: Dark brown with an undertone of green.

Then began the actual work of designing. Original research in the realm of furniture was required. Visits were made to store and factory to obtain ideas in design and for the purpose of studying typical forms of cabinet construction.

The usual height of chairs, tables, and sideboards was studied and discussed. Later an original design in pencil for each piece was submitted by each member of the class. From this sketch a working drawing and a drawing in perspective were made and inked. Some of the perspectives were later done in color.

This work was, of course, competitive, the most suitable design for each piece being selected by a committee consisting of the instructors in art, domestic science, and manual training. Tracings were made from the selected drawings and blueprints struck off. All was then in readiness for the actual construction, which began shortly before Christmas.

Commercial methods were adopted so far as possible throughout. The class of twenty boys was divided into five groups and a foreman appointed over each. The side chairs were assigned to two groups, the armchairs to one, the table

to another, and the sideboard to the fifth, leaving the small serving-tables for those who should finish first. Practically all instruction was given to the foremen, who, in turn, looked after the details of the work.

During the greater part of the year time-sheets were kept showing the amount of time spent by the different groups in the construction of each piece.

Class discussions were held during which opportunity was given for the settlement of all disputed points. In this way also the entire class was able to keep in touch with the main points in the construction of each piece.

Present space will not permit a detailed account of the many difficulties encountered, of the many battles fought and won. Suffice it to say that the results, both educational and commercial, were all that could have been expected. The year's work was one long lesson in generosity and good-will, in which each boy did his best. They learned to command firmly without being overbearing, and to obey with cheerfulness. Such a course is a maker of men.

While this work was going forward in the shop, the dining-room was being prepared for occupancy. The woodwork, which had previously been natural cypress, was refinished by some of the larger members of the class to correspond to the furniture, and the floor stained to match. Decorators papered the walls and ceiling, the ceiling being dropped to the plate rail which extends around the room at the height of the door frames. Lanterns of brass and colored glass were made and hung in place. Thus with the addition of stenciled window hangings in blue and white from the domestic-art department, the room was ready.

The above illustrations are but meager indications of the possibilities of manual-training work and give little conception of its wider development and possibilities in any system. It is believed, however, that they contain the correct key to the situation — that the manual-training work must be divorced from formal exercises and be based upon worth-while projects growing out of the vital interests of the children, and recognized as being worthy of effort.

The motivation of agriculture and nature-study. The work in agriculture and nature-study is motivated not only by the desire to do things, to be of importance, to accomplish results, but also by the commercial opportunities of the undertaking. The successful club work now carried on by the Department of Agriculture in all parts of the Union makes use of all of these motives. It has given children an opportunity to be prominent by winning prizes and has rewarded them even to the extent of trips to the seat of the National Government.

But while only a few could win the larger recognitions, all have been able to accomplish something worth while and to carry out enterprises in which the children themselves were the chief actors. The ten-year-old boy in North Carolina who raised two hundred and twenty-eight bushels of corn to the acre not only "opened the eyes" of his clubmates throughout the country, but of farmers and business men as well, particularly throughout the Southern States. Acre-yield contests by schoolchildren everywhere have shown a much higher yield than the average yield among farmers. A higher yield was to be expected, due to the extra interest and care, but an average two or three times the average for mature farmers has shown the possibilities of a better agriculture and given children stimulus for further effort.

Most of the club work has been carried on by children in the grades. It has tended to motivate other work, such as composition, spelling, writing, and manual training, but this has been of secondary importance. As teachers and citizens have seen the importance of the undertaking, they have not hesitated to designate agriculture and nature-study as lines of school work worthy of a part of the regular school time.

Thousands of boys and girls throughout the nation are

engaged in this club work, and a discussion of the work by Mr. Benson, of the Department of Agriculture, reads like a romance. Girls in the South and North have been inspired by their small successes and many have paid their way through college with canning projects. Over eight thousand boys and girls in Iowa were interested in this club work in 1915, and one return shows a yield of one hundred and fifty-one bushels in the acre-yield corn contest. Many go above one hundred bushels. These boys and girls are given recognition at county fairs, at the state fair, and at the short course of the agricultural colleges. They are made to realize that they are important members of the Commonwealth.

The agricultural movement has not been confined to country children. The Chicago *Tribune* of August 29, 1914, contained an illustrated article upon the work of the children who went to the Dvorak Park School. Seventy children had miniature gardens on the corner of the school-grounds. They used spades and rakes in planting, carried forward the work to its completion, and again in a few weeks began to gather their crops of radishes, lettuce, etc., and to replace the temporary crops by others. A month or so later the Chicago *Tribune* contained further details of this school project, showing a harvest scene later in the fall. The children by actual experience gained knowledge as to crops, their production, crop failure, and other details which are valuable in themselves and which give them a larger interest in one of the great productive industries of our nation.

A report on a tenth of an acre garden managed in connection with the model school of the summer session of the Iowa State College gives some idea of the commercial possibilities of a garden enterprise. This garden

was conducted under ordinary circumstances, was not planted until May 20, was not irrigated during the dry summer, and received only ordinary attention throughout. The crops raised were beans, beets, cabbage, corn, cucumbers, lettuce, peas, and tomatoes. The expenditure for plants and seeds amounted to $6, for labor $10.50, or a total expenditure of $16.50. The returns totaled $35.55; the largest returns being from lettuce and from tomatoes. Thus a profit of $19.05 was secured upon the tenth-acre undertaking. While the returns in money were worth considering, this was really a secondary purpose, the chief purpose being to furnish a demonstration garden for the model school.

The possibilities of motive for high-school project work in agriculture are large. In a published letter, Director Stimson, of the Massachusetts Board of Education, said: —

> Recently I brought together items and totals for the account of twenty-five boys; five from each of five representative points in the State where project work in agriculture has been in operation the past summer. I found that these boys had earned from farm work in connection with agricultural work in school in 1912 more than five thousand dollars ($5132.05). In this enterprise twenty-two of the boys earned more than $100. Twelve earned more than $200; one earned over $300; and another was within $5 of $300, while one earned $529.76. Of the three who earned less than $100, one was within $5 of the even figure.

The boys in the Massachusetts work[1] are at least fourteen years of age, but their success indicates great possibilities along this line. The plans that are being put into operation in Pennsylvania, Indiana, and Illinois indicate that this type of agricultural work is sure to in-

[1] See U.S. Bureau of Education, Bulletin 8, 1914, "The Massachusetts Home Project Work in Agriculture."

crease. And it should. It takes the agriculture out of books and bulletins, and applies it on the farm and in the garden. It gives motive, and connects agriculture with life.

Agriculture is now a required study in the schools of half the States of the Union. It has come in response to the practical demands of farmers, bankers, and business interests. Fortunately, it lends itself easily to concrete work and is easily motivated. It is having a good effect upon all other lines of school work. Except in a few of the Eastern States, it connects directly with the homes of a majority of the children. But even in the cities it has large informational value, and some time can be given to it profitably. In the hands of competent teachers in rural districts, it becomes the best organizing center of school work and one of the best contacts with the home and community life. It is life.

A partial list of the exercises in a preliminary course for rural teachers will tend to show the practical self-motivated nature of agriculture as a school subject. While these exercises deal with soils and plants, they are to be considered not from the standpoint of scientific knowledge only, but from the standpoint of the practical value of the knowledge gained. The pupil uses the knowledge directly in crop production, possibly in a personal project. With this in mind, notice a brief list of exercises: —

1. The effect of color of soil on temperature.
2. Percolation of water down through the soil, rate in different soils.
3. Capillary rise of water in soils of different types.
4. Effect on capillarity of having a layer of organic matter or clods in the bottom of the furrow.
5. To determine the manner in which water enters the tile drain.

6. Moisture-holding capacity of soils.
7. Effect on plant growth of water saturation of soil.
8. The effect on structure of stirring soils when wet.
9. Determining amount of air space in soil.
10. Determining the weight of soils.
11. The effect of freezing on structure of soil.
12. Effect of lime, organic matter, or sand on structure of puddled clay soil.
13. Determining the factors necessary for seed germination.
14. The performing of cross-fertilization on a flower.
15. Relation of moisture to seed germination.
16. Relation of oxygen to seed germination.
17. The effect on germination of removing the endosperm.
18. Measuring the strength of roots in holding a plant to the ground.
19. Determining the amount of water given off by leaves.
20. Learning how and when the food is manufactured in the leaves.
21. Demonstration of the acid secretion of roots.

The above list of exercises may well serve a double purpose in this connection. They represent the correct type of agriculture for the rural schools, — the type based upon experimentation and doing things rather than reciting words from a book, — and they show the ease with which properly organized agriculture work is transferred directly to production and to life activities. Agriculture properly taught is largely self-motivated.

Correlation. The motivated problem as a basis for school work naturally involves a great deal of correlation. If the pupils are working on a problem in which they are interested, they want to turn all of their energies in that direction. The art, the manual training, the arithmetic, the reading, the language, can all be centered on a single problem. This means, frequently, that the room teacher has a good deal to do with the direction of the work of the special teacher in the city system where special teachers are provided for home economics,

art, or other subjects. With the general introduction of the industrial subjects into the schools, there is coming a decided rearrangement which lends itself admirably to proper motivation of the work. Frequently, this involves the reorganization of the entire community and of the entire school curriculum. One rural school supervisor of home economics (Charles City County, Virginia) indicates her experience in thus reorganizing the spirit of the school and community as follows: —

To create a demand on the part of the community for domestic economy was our first task. It has been said that the average farm woman gets up early in order to get breakfast early in order to wash the dishes early to get through and get dinner early in order to get supper early and finish the dishes in order to go to bed early, that she may get up early the next morning and repeat the process. You cannot teach all the children of all the people, unless all the people of all the children will let you. To teach a housewife that cooking bread and meat and a few vegetables in some kind of a way is not the aim or end of home economics; to overcome her many prejudices and to persuade her that it is possible so to plan and systematize her work that life may seem more worth living, is no small task. To this end the life of the neighborhood was organized with the schoolhouse as the center. There were farmers' unions, for the farmer; homemakers' clubs, for the farm woman; school improvement leagues for all; and boys' and girls' clubs for the boy and girl — all meeting at the schoolhouse and conducting their own meetings.

A progressive, wide-awake county superintendent interested the school boards in building new model schoolhouses, consisting of classroom, cloak-room, and domestic-science room. The latter was equipped with an outfit costing eighteen dollars, and consisted of an oil stove and oven, cooking-utensils, and dishes to serve six people. These were purchased by the school improvement league.

Plans and methods of teaching domestic science were discussed at teachers' meetings and outlines of lessons given the teachers. The schools were visited every two or three weeks and model lessons taught for the teacher.

But before this could be done, the program had to be rearranged. No teacher had over five grades and no high-school work was allowed. The recitations were cut to about half their previous number, and many traditional and time-honored essentials went out of the window when domestic science entered at the door. Those left were reorganized, and instead of "arithmetic and adenoids, history and hookworm, civics and spinal curvature, Cæsar and consumption," we planned to teach arithmetic and agriculture, history and home economics, civics and corn-growing, reading and rotation of crops, spelling and spraying, chemistry and cooking, literature and the art of right living.

Which phases of home economics to attempt were questions we were early called upon to decide. In planning our program, we placed sanitation first on the list. A campaign was waged for cleanliness as the first essential: more fresh air, more and purer water, cleaner and more beautiful schoolhouses and homes, more paint and whitewash. Teachers were encouraged to keep health records showing number of pupils failing to brush teeth each morning, number having colds, wet feet, etc.

The second essential was the preparation of some hot dish for the children's lunch and an organized noon hour, etc.

Experiences similar to this are becoming common throughout the United States, particularly in connection with the club work or home-project work in agriculture. The situation in Indiana is typical. Until two years ago, the industrial work was introduced only here and there as some school men, then considered a little more radical than was desirable, introduced the work. Since the passage of the industrial and vocational law two years ago, there has been a complete reorganization. In the rural communities, agriculture becomes the great center and organizing force for all of the school work. Club work or home-project work insures the carrying through the entire year of interesting undertakings which are in turn closely connected with and constantly used as a basis for reorganization of school

work. As teachers realize the possibilities of undertaking worth-while problems in which the child himself becomes the chief mover and organizer, we may look for more and more correlation of the work in which school work shall not be simply an exercise in itself, but information that performs a service in accomplishing something worth while.

CHAPTER XI

SCHOOL ACTIVITIES A MEANS OF MOTIVATING THE WORK OF THE SCHOOL

THE time of the school is used mainly in teaching the various subjects of study. In the preceding chapters it has been, therefore, the aim of the writers to help teachers in putting new life, keen interest, and motive into the teaching of the regular program of studies. To this end, emphasis has been placed on the greater value of school work which is organized about the actual needs and problems of pupils as compared with the usual type of formal textbook lessons. The treatment in the preceding chapters has purposely been organized around the regular school subjects.

Using the social and competitive instincts. The content of this chapter could have been so presented, but with the object of emphasizing one of the most fruitful sources of good motives, it seems important to show how the school activities afford excellent motives for the regular work of the school. In the following discussion we shall indicate concretely how the school assembly exercises, the athletic activities of the school, the publication of a school paper, and other interests afford strong motives for the many phases of school work.

In every school where the social and competitive instincts are allowed reasonable freedom of expression, many activities in addition to those on the printed program are certain to develop. Likewise, in every school

neighborhood in which there is sympathetic team-play between the school and the home, as well as between school and school, and the other educative influences of the community, various types of coöperative effort spring up. These forms of activity are not only valuable educative influences themselves, but under right leadership they also afford significant opportunities for motivating the school studies which the pupils should be pursuing. There is, therefore, every reason for encouraging organized activities within the school and coöperative efforts between the school and the community in the interest of making the educative opportunities afforded by the school as varied and rich as is consistent with thoroughly good work in the fundamentals.

One energetic principal of an elementary school in a city system, in coöperation with the mothers' club of the school, held an annual school fair or bazaar, usually in the month of November. The apparent object always was to raise money to finance some project, such as supplying good works of art for the beautifying of the rooms and corridors of the building, establishing a school library, equipping certain rooms in the building, beautifying the school property by grading and planting it, and by locating the play apparatus in accordance with a landscape architect's plans.

In this school, as must be true in any school if the work and machinery of executing such projects do not become objectionable, interfering seriously with the regular work of the school, the principal and teachers were primarily interested in each fair because it was the source of an almost countless number of opportunities for relating intimately the home and school and for motivating the children's school work. Instead of the

fair being something external to the school under the guidance of the principal, the larger ends and objects sought, as distinguished from the purely monetary, became the purposes of the children. And well they might, since every undertaking had as its object the improvement of the advantages of the children of the school. In reality, therefore, the annual fair was a product of the combined efforts of the school-children and their teachers and mothers, in which all became actively concerned for its success.

So definitely understood were the purposes of the fairs which the regular school work might aid that not only were the teachers able to originate useful plans and projects, but the children likewise made many practical suggestions for the improvement of the bazaars. While the combined interest and help of all rendered these efforts more successful, the largest gains to the school resulted from the work which the children did upon problems derived from aiding the bazaars, which were genuinely real to them. The children in every grade were able to do something which needed to be done and which they were eager to do. At the close of one bazaar the principal's diary showed the children had aided in these ways: —

The first grade had made paper chains for use in decorating the candy-booths and small, decorated paper baskets for dispensing salted peanuts. The second grade had made small paper-receivers for use in serving salt and nuts with the meals served at the bazaar. In one of their language lessons, the third-grade children aided the candy committee by composing a note, which they duplicated many times in the writing period, asking the mothers to donate sugar. There were many things the children of the other grades could do. The boys made such articles for sale at the fair as shoe-polishers, clock-shelves, picture frames, easel photograph-holders. The girls

furnished for sale linen bags, wash-cloths, combing-jackets, sofa pillows, table-runners, hemstitched towels, tilo matting mats, hand-embroidered cardcases, sewing-bags. The boys also made the wood blocks which the girls used in stenciling their sewing-bags.

Because the principal and teachers of this school were capable of discovering in these annual efforts of the mothers' club opportunities for the children to aid in things they were anxious to do, all became active and helpful. The children were anxious to help. They needed no persuading. The teacher's function in each grade was mainly to afford the children an opportunity to work upon problems which would properly further their educational development. The result was that for five or six weeks, near the opening of each school year, the children were at work upon a large number of problems of absorbing interest. They were not mere school tasks assigned them from textbooks. They were real social and business problems which the children were definitely concerned in solving. The various class exercises contributed, as was appropriate, to the solution of each problem attempted, with the result that sewing, manual training, drawing, writing, arithmetic, and composition each afforded the children an opportunity to work under the stimulus of strong motives for attainment.

All projects for raising money [1] to be expended for

[1] The tax-paying public has as yet scarcely reached the point of view which sanctions the expenditure, by boards of education, of public funds for such equipment as play apparatus, works of art for the decoration of school-buildings, Victrolas, pianos, stereopticons, moving-picture machines, and the like. All of these are so valuable in the work of the school, however, that enterprising communities are determined to provide them for the use of the schools in the instruction of their children. Such worthy ends lead to various projects for making money. Rightly managed, many by-products of great value for the school are secured. So long as due care is exercised not to rob the regular work of the school of its proper amount of time and atten-

the improvement of the school facilities, which are of such character that the children may contribute to them in the course of their legitimate school work, afford excellent motives for the children's efforts. The general nature of these efforts and their possibilities for motivation are well illustrated above. Not only fairs afford desirable motives, but entertainments consisting of simple original plays, musical programs, and miscellaneous exercises, all afford genuine motives for producing the results embodied in the programs.

The school assembly. One of the largest and most important features of any school which is well unified and rationally enthusiastic is the school assembly. If it is profitable and successful, it must be conducted by teachers and students coöperating both in planning and in developing the programs for the assembly exercises. Many schools find the assembly exercise so valuable that the program provides for its daily occurrence.

The Francis W. Parker School devoted one of its *Year-Books* to the "morning exercise," the entire faculty

tion, money-raising projects not being allowed to interrupt the regular serious work of the school, it can hardly be objected to if by-products of the work of the school are sold at their approximate money value. Especially is this true if the money realized goes to worthy ends, and if the object of producing a marketable product serves both to arouse the pupil to increased interest in his work and to direct his attention to the essential features of a usable product. The nearer the school has approached to producing practical, usable products in its manual and household arts courses, the larger has been the motive of the pupils in the work, with resulting increased attainment both in skill developed and in results produced. Care merely needs to be exercised as indicated above. It would be a serious mistake for any school to be concerned throughout the year with helping to put on a series of bazaars. The motives derived from just one such undertaking per year, if the primary concern of the teaching staff is to vitalize the work of the pupils rather than to make money, will do much to make all corresponding problems and lines of work met at other times in the year seem worth while.

of the school coöperating in the production of the *Year-Book*. In this school, the "morning exercise," as it is called, preserving Colonel Parker's terminology, occurs daily. When this school was founded, many of its teachers, who had worked with Colonel Parker in the "old Normal School," felt that the morning exercise was as essential to the idea of a school as was a curriculum. It is "fundamentally social in purpose," and is "called the pulse of the school, registering unfailingly our social condition and welfare." Since October, 1905, committees representing the students and faculty have worked coöperatively for the improvement of this feature of the school.

That a very high standard of usefulness has been realized in this exercise by the Francis W. Parker School may be seen from a casual examination of the *Year-Book* [1] devoted to this topic. Since the programs for the morning exercise are usually the outcome of classroom work in the various school subjects, or in celebration of some festival or historical event, the motives afforded for the regular work of the school are both manifold and potent. The children of the school realize the character of work which may be presented and the degree of excellence it should evidence to be creditable. They likewise realize that it is a distinct recognition to be allowed to provide the program for a morning exercise. Every group is, therefore, constantly watchful of its daily work to discover some product adapted for use in the school assembly. Having discovered it, they file their request to be called upon with the proper committee of the school. At times, of course, the morning-exercise committee is in need of a special program and

[1] *The Morning Exercise as a Socializing Influence*, by the faculty of the Francis W. Parker School (Chicago, 1913).

invites contributions; but the children realize that the most meritorious work offered must finally be chosen for use. In part as a result of the motive of producing work meriting use in the morning exercise, good work and high standards of attainment have become the fashion among the students of the school.

The variety in the programs presented shows the extent to which the assembly touches every aspect of the school's efforts, motivating not only the children's attainments in classroom work, but likewise their realization of the school's standards in attendance and conduct. Any grade and any subject may provide the morning-exercise program. In the *Year-Book* the programs reported are distributed throughout the school from the first grade to the classes of the high school. Literature, arithmetic, geography, history, nature-study, physics, chemistry, Latin, art, music, and physical education were all drawn upon for program material. Some programs were designed especially to motivate right social conduct and the adequate bearing of responsibility, the aim being to unify the school community by the discussion of common purposes and relationships. Under this guiding purpose, the children and faculty discuss freely together questions of school administration, and thus the children are brought into close contact with the principles and policies of the school.

That the school assembly with its rich values need not be confined to private schools or to schools employing only especially gifted teachers, but that it is possible in any school in which the teachers understand its function, is clearly evidenced by its effective use in all types of schools working under all sorts of conditions throughout this country. The following quotation from

an article by the principal of a four-room school [1] is a good statement of procedure in the school assembly with suggestions in reference to the guiding purposes and the results secured: —

The general plan of the exercises, which are held the first forty minutes of each Monday morning, is as follows: —

A devotional period led by some room, attendance report of different rooms, and the awarding of the school pennant to the one having the highest per cent; the presentation of the best work done, such as songs, poems, letters, compositions, dramatizations, reading, etc.; talk by the principal in which she strives to present some vital truth in such way as to influence conduct and stimulate the children to live up to their higher, truer selves. The entire school assembles in the auditorium (often the lower corridor was used instead) and remains quietly standing until after the brief devotions. Some grade is always ready to give the devotional song and poem, the entire school gives the scriptural reference, and then with bowed head prays the Lord's Prayer.

The school then is seated tailor fashion on the floor, eager and anxious to see what is going to happen. Which grade will have the highest record in attendance and the fewest tardinesses and carry off to their room the beloved school pennant? If it is the first of the month, what room is to be made even more beautiful by having in it the colored picture of "Autumn," which so rests one to look at when little hands and eyes are tired?

How much glory to the little second-graders this morning when they have succeeded, after such a struggle with sore throats, measles, and even scarlet fever, in not only having the highest record for the week just passed, but for the month, too, and having both picture and pennant assigned to their room. With much friendliness, the pennant changes hands and the others give them a rousing clap; but declare that they won't be able to keep it long, because they are working, too, and intend to take it from them. As a result of this friendly, spirited contest, we have had no cases of truancy and almost no absences caused by other reasons than sickness.

[1] See an article by Sarah Mark Imboden, in *School and Home Education* (May, 1909), pp. 332–38.

Following the attendance report and the awarding of the school pennant, the presentation of work is given. All meritorious dramatizations in the various rooms are re-given before the entire school at assembly; also the best of the oral and written compositions. Not only have we found it a legitimate motive, but one which appeals strongly to the children. We have often found them, after having done something unusually well, asking if it may be given at the next assembly.

It is probably in the little talk by the principal, however, that the school is most closely united, as she attempts to develop, through stories and actual life situations, the ideals of conduct on which the school as a social institution should be based.

In so far as possible or advisable, the children have discussed and largely determined what their mode of conduct shall be as members of the school with the higher motives we are striving for in view. Their ideas and plans may not always be right, it is true, but they can be led to see why the course they may wish to pursue is neither the wise, safe, nor just one. Too often when a child in good faith asks for an explanation of some edict just issued he has received a reply similar to this: "Whether you see or not makes no difference; it is to be so and so. If you do not choose to conduct yourself accordingly, you must abide by the consequences." How often we take advantage of the powerlessness of the child and treat him with a rudeness and discourtesy that we should be ashamed to exhibit to our adult friends. We may judge by our own sensations just how a child is affected by a corresponding manner of treatment.

As Dewey says, "A child should have a positive consciousness of what he is about, and be able to criticize his respective acts from the standpoint of their reference to the work which he has to do."

Our standards of conduct, therefore, have, as I said, been freely discussed and determined at our assembly periods. Most of the talks have been based upon some memory gem given to the children. Being exceedingly fortunate in our teachers, we have found that the thought, carried on and enlarged by them through the week, has been greatly instrumental in controlling and moulding the conduct of the pupils.

Having no pupils above the fifth grade, we have found it best to gain attention and present the truth through a story.

And so I might go on indefinitely and show how much has been gained in self-control, carefulness in little things, courtesy, prompt and cheerful obedience, disposition to play fair.

We feel that assembling together has resulted in creating a deep earnest feeling that "every one is for every one else." Even among teachers it is not "my boys and girls and your boys and girls," but " ours."

Large motive is supplied for all phases of high-school work which may result in products suitable for use at the assembly exercises of the school if the principal or program committee has the custom of deriving a portion of the assembly programs from such sources. There is no subject in the high school from which suitable material may not be profitably developed for such use. Likewise, there are many questions of social ideals and conduct and of scholastic and disciplinary standards which are well suited for profitable treatment by the students in meetings of the entire school. If the student body thus participates in the consideration of such problems, not only is the effort before the assembly highly motivated, but the effort necessary to realize the required standards is also definitely motivated.

The following program presented in high-school assembly when the National Vocational Guidance Association was in session in Grand Rapids, Michigan, in October, 1913, is typical of the program which high-school students are capable of providing: —

ASSEMBLY
Central High School Auditorium
Nine o'clock
Presiding Officer, Henry Sprietsma
Speaker of High School
House of Representatives

Selection by High School Orchestra
Directed by Leo Ruckle, Student

The Work of the Junior Association of Commerce
Dawson Spurier, President

Student Activities and Social Efficiency
Margaret Robinson
Representing Girls' Leadership Club

Training for Leadership
Harry Hoogesteger
Representing Boys' Leadership Club

The Use of Moving Pictures in Vocational Guidance
A Demonstration

Another program of an unusually profitable and inspiriting school assembly is the following, which was given during the summer session of the Kirksville, Missouri, State Normal School. President John R. Kirk wished to demonstrate to the normal school students some of the results which the children in the various grades of the practice school were achieving in their work. From the standpoint of the children, his object was to recognize the meritorious results their efforts had procured. Partly due to the inspiration of knowing they would be called upon for such a program, the children had been working very hard, and their pleasure in sharing the results of their efforts with over a thousand mature students was undeniable. Every number except the last was contributed by the practice-school children,

some three hundred of them taking part with fine *abandon* and unconscious enthusiasm.

PROGRAM

Songs
Birdie with a Yellow Bill .....
Little Raindrops ..... } Kindergarten Children
Song
Bobby Shafto.....First Grade
Song
An Early Cowslip.....Second and Third Grades
March.....Kindergarten Band
Norwegian Folk-Dance
The Mountain March.....First, Second, Third Grades
Music for dance supplied by piano and kindergarten band
Bohemian Clapping Dance.....Upper-Grade Girls
Straddle Ball Relay Race.....Upper-Grade Boys
Physical culture drill
The Sword Dance .....Upper-Grade Girls
Songs
What from Vengeance (*Lucia di Lammermoor*) (Donizetti)..... } Normal School Sextet
Miserere (*Il Trovatore*) (Verdi).... }

The programs and exercises required for special days, seasonal festivals, and anniversary occasions provide all the values and opportunities for the work of the school that are afforded by the morning assembly. If proper care is taken to vary these programs in the various grades and from year to year, they are intensely interesting and very valuable. Most good schools make provision for the proper observance of all or many of the following: Discovery Day, Hallowe'en, Thanksgiving, Christmas, St. Valentine's Day, Easter, Arbor and Bird Day, Memorial Day, and the birthdays of great Americans, such as Washington, Lincoln, Longfellow, Frances E. Willard. Different communities and States observe other days also because of their special local significance.

The state departments of education in many States issue beautifully illustrated booklets suggesting programs of value appropriate for use in the celebration of various special days and occasions. A few city school systems have worked out graded programs with care. It seems unnecessary, therefore, to illustrate by quoting typical programs. The important thing stressed here is that these programs should grow out of the regular work of the school and afford large motives for attainment in those exercises and subjects of the school which contribute to these special programs.

In every school where the teaching staff realizes its possibilities, the children have the benefit of developing suitable programs for accepting and dedicating the gifts which are presented to the school from time to time. Until the social point of view became dominant in recent years, such gifts were accepted ordinarily by some official of the school; but no corps of teachers who realize the values resulting to children from such participation would think of omitting them from a part in such recognition as the bestowal of a gift seemed to require. Not only does such participation accustom the children to be thoughtful in responding to courteous treatment, but it also trains them in the details of good social usage. If the gift is sufficient to render a dedicatory program appropriate, it affords the children experience with the nature and details of a ceremonial exercise. It is evident that the motive for developing every feature of an appropriate program for accepting or dedicating a gift would be very genuine. It is inexcusable to withhold from the children the inspiration of working toward such definite and genuine ends.

The following program was presented before a large meeting of the patrons of a school on the occasion of

dedicating a new Edison phonograph. Advantage was taken of the occasion to illustrate to the patrons the various types of music work done in the elementary schools and the musical ability of the children. Brief explanations by the supervisor of music as the program progressed helped to increase the pleasure and profit to all: —

PROGRAM

I. Songs and folk-games
  1. First Grade
    When the Regiment Goes Marching By — Gaynor
    When the Little Children Sleep — Reinecke
    Minuet — French Folk Games
  2. Second Grade
    The Raindrops and *Bouncing Ball*
    The Shoemaker's Dance (with record) — Danish Folk-Dance
  3. Third Grade
    The Shell — Adam
    Kull Dansen (with record) — Swedish Folk-Dance
    The Postilion — Taubert

II. Study of American composers and American folk-songs
  1. Fourth Grade
    The Mill — Nevin
    Narcissus (story and record) — Nevin
    Little Boy Blue — Nevin
  2. Fifth Grade
    The Swing (with folk-game) — Nevin
  3. Sixth Grade
    The Star-Spangled Banner
    America
    The Old Folks at Home

III. Folk-Songs of other nations
  1. Seventh Grade
    The Hardy Norseman — Norse song
    Santa Lucia — Italian Song

IV. Selections from great composers
  1. Eighth Grade
    Spring Song — Mendelssohn
    Pirates' Chorus — Sullivan

Athletic events and school societies. The athletic events of the school and the activities growing out of

the work in physical education, often culminating at the close of the year in a physical education exhibit, exercise a wonderfully stimulating influence in the school, if rightly managed and if properly related to the entire work of the school. The play and competitive elements in these activities render them very attractive to children. If participation in public exhibitions and contests is conditioned upon maintaining high scholastic standing in the other work of the school, the athletic activities of the children supply good motives for the other phases of school work.

The activities of the literary societies, the debating teams, the dramatic clubs, and of the other school organizations afford sources of excellent motive for the regular work of the school. Not only may membership in these organizations be conditioned upon maintaining a high standard in the regular studies of the school; but those subjects may be so organized as to enable the students to work upon their duties in these voluntary organizations while preparing their daily lessons. The work in English and in the social sciences may often be highly motivated if it is thus related to these so-called out-of-class interests of the students.

Many school systems so organize and manage the school exhibits that the children manifest great interest in the exhibits throughout the year. If the school exhibit is made a means of representing constantly the best types and standards of work which have been achieved from grade to grade in the various subjects, the children become deeply interested in trying to improve over the work they have on exhibition that they may replace it with better results. They also become greatly concerned to produce some type of work worthy of exhibition which is not yet represented in the exhibit.

Many schools also supplement the usual type of exhibit with a living exhibit during the hours the public are inspecting the work. Since only the best results may be used in such a program, a large motive is supplied for the types of school work from which the numbers on such programs are derived. Following is a typical program which was presented in the auditorium of the building in which the central exhibit of the schools was held. Practically all of the schools in this system were represented in the programs. The programs were largely attended and thus the exhibit reached a much larger number of the citizens than would have been possible if these programs had been omitted.

PROGRAM

Wednesday, May 26, 7.45 P.M.

Music.....Garfield School Orchestra
Wig-Wag Drill .....First Grade, Lowman Hill School
Dramatization — *Pony Express — Why the Sea is Salt*
Third Grade, Lafayette High School
Songs — *The Raindrop's Message, O Round and Round We 're Going, The Brownies*.....Third Grade, Monroe School
Swedish Weaving Game .....Fourth Grade, Sumner School
Piano Solo — *Fantasia in D Minor* (Mozart)
Eleanor Allen, Van Buren School
Wand Drill .....Sixth Grade, Lincoln School
Songs — *Voices of the Woods, Maybells and Flowers, God of the Nations*
Fifth and Sixth Grades, Van Buren School
Advanced Gymnastics.....Seventh Grade, Clay School
Exercise — *Old King Cole*.....Eighth Grade, Sumner School
Maypole Dance.....Eighth Grade, Washington School

Thursday, May 27, 7.45 P.M.

Trio for Violin, Cornet, and Piano....Eighth Grade, Branner School
Henry Mason, Bernice Sprague, Ardis Wolverton
Highland Fling.....Sheldon Kindergarten, Buchanan School
Songs — *In Germany, What the Robin Sings*
Second Grade, Polk School
Dramatization — *The Muffin Man*..Third Grade, Van Buren School

Trio for Violin, 'Cello and Piano.....Polk School
Bernice Turner, Louise Turner, Mrs. P. D. Turner
Songs — *The Drum, Branner School Song*
Fourth Grade, Branner School
Military Drill.....Fifth Grade, State Street School
Songs — *Gypsy Birthdays, Under Our Old Umbrella, Kansas Song* (New)
Fifth A Grade, Grant School
Pyramid Building.....Boys, Central Park School
Songs of Springtime and Dances of the Seasons
Girls of Fifth, Sixth, Seventh, and Eighth Grades, Central Park School

Friday, May 28, 7.45 P.M.

Music.....Quincy School Orchestra
Dramatization — *Pop Goes the Weasel*
First and Second Grades, McKinley School
Dramatization — *Sleeping Beauty*....Kindergarten, Parkdale School
Songs — *In Japan, The Rose, The Bluebird*
First Grade, Washington School
Hoop Drill.....Second Grade, Harrison School
Free Hand Gymnastics.....Third Grade, Harrison School
Songs — *The Nightingale, Dawn and Sunset, To a Honey Bee*
Fifth A Grade, Lafayette School
Reading.....Esther Freeman, High School
Indian Club Drill.....Seventh and Eighth Grades, Potwin School
Songs — *The Beautiful Blue Danube, The Dancers*
Eighth Grade, Quincy School
Drill.....Girls, High School

The school paper. One of the most valuable things a school can do in vitalizing the regular work of the school and in providing excellent training facilities on its own account is to publish a school paper. In recent years this undertaking is almost universal in high schools and is becoming quite common in large elementary schools. If a printing-plant is provided by the school so that the children may print[1] their publication, the values are largely increased. As yet, however, most schools do not possess well-equipped printing-plants, but must have

[1] We are not concerned here with the values of teaching printing as a phase of manual training. Our interest is especially in the gains to the regular work of the school from preparing and issuing a school paper.

their papers printed by commercial plants. Usually the printing must be paid for. There are many instances, however, where the local daily paper has printed the school news under a title chosen by the school, giving as much as a half page or more of space in some regular issue. The possibilities and values from publishing a school newspaper in the columns of a regular daily are so well set forth in a recent article in *School and Home Education* [1] that we quote from it fully. This article describes a plan whereby each elementary school published one issue of its paper each semester in the columns of the local paper.

The following types of work are recommended as specially suited to the different grades. Freedom is given to deviate from these recommendations. They are suggestive only.

Grade One
- I. Paper-cutting
  - A. School activities
    1. Play ground
    2. Garden
    3. Regular classroom work
- II. Provide activities which may be reported by older children

Grade Two
- I. Rhymes (original)
- II. Riddles (original)

Grade Three
- I. Games
- II. Report of hand work
- III. Nature Study

Grade Four
- I. Advertisements
  - A. Wanted
  - B. For Sale
  - C. Lost and Found

[1] Katharine Hamilton, "English Training through the School Newspaper," *School and Home Education* (April, 1915).

Grade Five

I. Advertisements
  A. Bakery sales
  B. May fêtes
  C. Wiener roasts
  D. School fairs
  E. Exhibits
    1. School
    2. Public

Grade Six

I. Study rhyme, rhythm, feet, etc.
  A. Class poem, as class composition work
II. News in brief

Grade Seven

I. Editorials
  A. Self Government
  B. School Spirit
    1. Loyalty
    2. Coöperation, etc.
  C. The School Playground as a Social Center, etc.
II. Ears (keynote of entire paper)
    1. Vital interests of school
    2. Suitable proverbs or school mottoes
III. Proof-reading

Grade Eight

I. Any and all phases of the paper.

This work has been valuable to the school from several viewpoints. The greatest good, it seems, has been derived from the fact that terse, clear, brief, concise and pointed English must be used in good newspaper articles. The training in relative values in this work is concrete and effective. The choice made of articles to use with consideration of the interests of the readers of the paper trains in judgment as well as in relative values. The selection of effective headings, sub-headings, etc., is the result of careful observation, discussion, and thinking, if it is well done.

The following letter from the editor of *The Review* to the superintendent of schools shows his wish so to cooperate in managing the undertaking as to afford the pupils the largest possible values from their work: —

The Review hereby invites the schools of Decatur to prepare papers to be published in *The Review* again this year.

These papers, like the school papers in other years, should be newspapers for their schools, made up according to the ideas of the pupils of what a newspaper should be.

News of the school, of the pupils, or any miscellaneous matter that it might be thought proper to include, should make up the paper.

Preparing the paper will be a good drill in English. Publication in *The Review* adds to the interest and importance of the work in the eyes of the pupils.

It is the desire of *The Review* to have, if possible, one of these papers to publish each Saturday, until each school has had two papers. One half a page in *The Review* will be given to each school paper.

A name should be selected by the pupils or teachers for the paper of each school.

It is suggested that if the pupils select their own boards of editors, with committees, or other groups to give opportunity for connecting as many pupils as possible with the paper, the work will be made more interesting and helpful. However, the whole organization will be left with the principal and teachers of each school to work out as they find most satisfactory.

The Review will be glad to arrange a personal interview to explain the plan more fully. This may be arranged by telephone.

With no expense at all to the school, great good may be brought to the pupils of any community from publishing a paper by the plan set forth above. Not only are the direct gains from the undertaking quite worth while, but the motivation secured for all subjects affected is vitally important.

It should be evident from the above discussion that it is highly important to plan the work of the school not only from the standpoint of the subjects of study, but from that of the athletic, social, and literary interests of the pupils. A proper appreciation of the significance of these interests and of the activities resulting therefrom

enables the teacher to motivate highly many phases of the work of her pupils in mastering their school studies. The great need in vitalizing school work is more thinking and planning on the part of teachers and supervisors in terms of social situations and practical undertakings on the part of pupils rather than such exclusive thinking and planning in terms of the pages and chapters of the textbooks in use. Motive for the use of textbooks becomes much stronger if pupils need to use and master them in solving important problems and in handling successfully some practical undertaking.

CHAPTER XII

MOTIVATION AND EFFICIENCY[1]

Efficiency and progress. One of the most noteworthy things in modern progress is the development of scientific management in almost every walk of life. Efficiency is everywhere the cry. Factory, office, home, and school alike strive for the maximum of accomplishment with the minimum of effort. Through its aid industrial enterprises determine to a fraction of a cent the cost of every bit of raw material, every process of manufacture, and the value of every employee's service; the office increases its output and lowers its overhead; the housewife calculates the family income and graduates accordingly the family expenses; the city checks its payroll and eliminates the traditional "pork-barrel." Scientific management saves even such apparently trifling things as the number of steps taken by the workman between bench and lathe, and accurately weighs the cost of a new adding machine as against the cost of the errors made by the bookkeeper's fallible human brain. Time, we now realize, is money; and the efficiency engineer has saved a vast amount of both for the world.

[1] In some respects this chapter is a summary; in other respects it is a prophecy. The authors have considered it worth while to close the discussion of Motivation with a chapter that unifies the work of the entire book and points to the possibilities of the future. In this connection, they solicit the coöperation of progressive teachers throughout the nation. Multiplied illustrations of motivated work are needed. If such illustrations are supplied to the authors, it will permit them to be of service in further developing this important detail of school practice.

Shortly after the success of scientific management in the commercial world was recognized, scientific investigators in the field of education began to transfer its terminology to the problems of educational management and direction.[1] As a result, the scientific movement in education which is so fundamental to the new education, has been greatly stimulated and accelerated. As in the case of the factory, this movement attempts to define clearly the precise results which may be reasonably expected at every stage of the pupils' progress through the schools,[2] to indicate the materials of instruction and the types of experience necessary to secure those results, and to determine the best types of organization and methods of work. The aim of scientific education is to secure the maximum results in all school work with the minimum expenditure of time, energy, and money.

Motivation the agent. The basic idea of this movement for school efficiency is the more adequate motivation of school work. The difference between motivated and motiveless work is the difference between a gang of expert masons building a wall and a gang of convicts moving a pile of stone from one end of the prison yard to the other in order to move it back again, because the warden thinks they ought to be busy. The improvement which scientific education brings to the school gives the

[1] See "Some General Principles of Management Applied to the Problems of City School Systems," by Bobbitt, *Year-Book* of the National Society for the Study of Education, vol. 12, part 1.

[2] It is becoming rather common for elementary-school courses of study to base the amount of results teachers are expected to secure on such accepted standards as those of Courtis and Stone in arithmetic, of Ayres and Buckingham in spelling, of Thorndike and Ayres in handwriting, and of others in reading, drawing, and composition. For a definite list of attainment requirements see Courtis's discussion of "Standard Rates in Reading," *Year-Book* of the National Society for the Study of Education, vol. 14, part 1, pp. 56–58.

children a reason for their work and makes their tasks seem really worth while.

The problem of establishing this motivation is the problem with which this book has dealt. It is by no means a problem solved; in fact, it is a problem on which most progressive teachers are working to-day, profiting by their experience, learning by their mistakes. It is only through their work that scientific education can gather its facts and evolve its conclusions; for the standards it sets up for the pupils' attainments at, say, the end of the sixth grade, cannot be determined deductively and abstractly. They must be determined in the light of society's needs, upon the basis of what pupils working under normal conditions have done. They must be realizable, tangible ends, recognized as such alike by the student and the teacher. The scales provided by scientific education, to which frequent reference has been made in the preceding chapters, are not hard-and-fast requirements, but rather a sort of mental yardstick by which the student may measure his progress toward the desired ends. This was pointed out in the discussion of writing, and the motivation value noted.

The elimination of the useless. Education is no longer regarded as an ornament for the few, but as a tool for the many. Consequently, one of the first tasks which scientific management has to face is the elimination of a considerable mass of dead and obsolete material from our courses of study.[1] The spelling of thou-

[1] See the following publications for illustrations of definite recommendations in such elimination: Part 1, vol. 14, *Year-Book* of the National Society for the Study of Education (University of Chicago Press); *Report* of the Committee on Elementary Course of Study of the Minnesota Educational Association, March, 1914 (Bulletin no. 51, Department of Education, Minnesota, St. Paul, Minnesota); *Report* of the Committee on Elimination of Subject-Matter (an educational bulletin by the Iowa State Teachers' Association, November, 1915), State Department of Education, Des Moines, Iowa.

sands of words meaningless to the children, with most of which the children will never be familiar enough to write, is being displaced by the policy of providing a small list of words which belong to the pupil's written vocabulary.[1] These they will use and should learn to spell correctly. Many topics in arithmetic [2] which formerly received hours of patient study and mechanical recitation are either entirely omitted, or are given but the briefest notice, because the children have no basis of experience for their study and are not likely to need them in mature life. Similar modifications are taking place in music, technical grammar, physiology and hygiene, manual training, domestic science, physics, chemistry, and other subjects. Only that content is being retained which is significant to the children in the successive stages of their development and which will probably be serviceable to them in their maturity, for this is the only sort of content which contributes sufficiently to the realization of the ends set up for attainment.

Aristippus, the Greek philosopher, in answer to the question, "What should the child be taught?" replied, "A child should be taught those things that he will need to know when he is a man." This is a fundamental principle. The schools should prepare for life. It remained, however, for the modern world under the

[1] See Ayres's *A Measuring Scale for Ability in Spelling*, E 139, Division of Education Publications of the Russell Sage Foundation (New York, 1915); Buckingham's *Spelling Ability, Its Measurement and Distribution*, no. 59, Teachers College, Columbia University Publications (New York, 1913); Jones's *Concrete Investigation of the Material of English Spelling* (University of South Dakota, 1913); also Pryor's "Spelling," chap. 6, part I, vol. 14, *Year-Book* of the National Society for the Study of Education (University of Chicago Press, 1915).

[2] See chapter IX on "Arithmetic."

leadership of Rousseau, Pestalozzi, and Dewey, to arrive at a conclusion equally fundamental: "The school is life." That is to say, the schools must prepare for life in terms of childhood, in terms of interests and motives which dominate child life. In other words, the only content which should be allowed in the course of study is that which has a definite meaning for the children while they are studying it, and which will probably be serviceable to them in their mature years. No other content is worth the time spent on its mastery. Moreover, the omission of the obsolete material [1] leaves room for new and vital material which is visibly useful and therefore easily motivated.

Efficiency applied to organization. Further, the organization, methods, and procedure of the school must be those most effective in producing the results sought. Scientific management is rapidly extending the period of secondary education down to the sixth grade, and producing many other marked changes in the organization and methods of colleges and secondary schools. It is also causing a reëxamination of the entire teaching process, based on a more accurate diagnosis of the difficulties of children in learning. Radical changes in periods of work and rest have been inaugurated in some school systems. The use of the school plant during the entire day and evening, instead of for only a few hours a day, is another change worth noting; and there are many others, some obviously valuable, others still in the experimental stage.

Perhaps the greatest thing that the efficiency movement has done is that it has broken up the crust of tradi-

[1] This accounts for the enrichment of the modern curriculum and the inclusion of industrial and commercial subjects as well as new cultural subjects.

tion. No longer can a thing be done simply because it always has been done so. Content, organization, technique of teaching — all phases of education must prove their right to exist. Each must show clearly that it is most serviceable in securing the ends sought. No longer can teachers or superintendents answer the question, "Why do you teach formal grammar?" by saying, "Because Lindley Murray did." The public is not interested in that excellent grammarian. It asks, "But do the children understand it? Does it really teach them to speak and write better English? Is it the most efficient way to teach them to speak and write better English?" And unless the teacher and superintendent can answer "Yes," and prove it, formal grammar must drop out of the course of study. The world is too full of valuable things for the child to waste time learning that which has little or no value.

The value of the child's time. As never before, educational leaders are realizing that the school time of every child must count for the most possible in his educational development. The years between six and sixteen are among the most important of an individual's life, and every hour of them should be made to count in developing a strong body and obtaining an efficient mental equipment. Therefore the program of work and the methods employed must be such as will enlist his interest and active attention, regardless of the competition set up by commercial inducements or outside amusements. Not only must the work of the school be intrinsically worth while, but it must be so presented as to satisfy the real needs of the child. Children are much like adults in that they do what they like to do, and time spent in presenting school work in such form that it is personally vital is far from wasted.

Therefore the doctrine of motivation in school work stands for so organizing every detail of the course that it shall be as interesting, attractive, and impelling to children as it is possible to make it. If as a result we succeed in making the school tasks appeal with increasing force to children, many gains follow, all of which contribute to that efficiency which is the concern of modern scientific education.

Establishing concentration. It must be borne in mind that motivated work focuses the child's whole attention, with all his past experiences and interests, upon the accomplishment of the new task in hand. His interest is not divided, as is commonly true when he is merely "getting the next lesson in the book." In other words, he learns to concentrate, and the establishment of the habit of concentrated thinking is one of the most valuable things that an individual can possibly learn. Even greater than the waste of time caused by unmotivated work is the waste of energy which it causes by establishing the habit of scattered thinking.

When the child is absorbed in an interesting task, however, his progress is certain to be as great as his ability permits. He works with greater speed. His accuracy improves. Thoroughness of interpretation is increased and more fundamental mastery is insured. Correct memorizing is rendered easier and more certain, and the need for drill is greatly reduced.

Not only does motivated work yield these direct effects, but three indirect effects of great value are secured.

(1) Children manifest greater independence, originality, and initiative in their work. They ask more searching and fundamental questions. They suggest related topics and problems for study and investigation.

They seek sources of help and suggest new ways of attacking problems. Instead of being passively interested, they become actively engaged in the recitation; they become alert, active, and helpfully aggressive. This establishes the habit of self-help and resourcefulness, which is particularly important in fitting them for success in the world of affairs.

(2) It requires but little of the teacher's time and energy to control and discipline her pupils if they are doing work so interesting that it fully engrosses their attention. The need for discipline arises out of conduct that interferes with the work and purpose of the school; and children who are busy with their tasks have neither the time nor the inclination to disturb others.

(3) The group, or class, become enthusiastic over their work, because they are doing something which seems valuable to them. Adequate motives insure enthusiasm in the student's work, and the more enthusiastic he becomes about it, the more vigorous are his efforts. Such motives establish the right emotional atmosphere for work. It is not a superficial enthusiasm resulting from the teacher's charming personality, or from her vivacious manner and skillful methods of presentation, or from an admiration for her learning, although these are all valuable assets. It is a deep-seated, enduring enthusiasm born of the student's conviction of the value he will receive from the mastery of his work. In such an atmosphere of genuine enthusiasm, difficulties vanish, results are attained, and victories are won. It is in the white heat of an abiding enthusiasm that hard problems are solved, immortal poetry is written, great music is composed, eloquent orations are delivered, and epochal discussions in religion or politics occur. Caught up by intense enthusiasm, the student gets a vision of larger

things, ideals are born, and relations otherwise impossible are established.

Not only do all of these effects manifest themselves in the student if his work is definitely motivated, but the increased results which he secures react to motivate his efforts still further. Nothing, after all, succeeds like success. It not only breeds confidence in one's self, but it develops an insatiable hunger for other successes. It is under the exhilarating influence of success that the student is led into greater and greater tests of his ability, with the result that he discovers in himself possibilities that otherwise might have lain untouched forever. The values arising from work under the influence of strong motives are unquestionable; and they urge us eloquently to make all possible progress in the motivation of the work of the schools. There is no doubt that more attention to motive will affect favorably all other lines of school work, — the course of study, the technique of teaching, the details of classification and organization — and will provide the working spirit for that efficiency which is the ultimate object of scientific education.

CHAPTER XIII

THE PROJECT METHOD

THE terms "project" and "project method" have come to have such an important place in pedagogical literature in the last few years that teachers should begin to seek a thorough, fundamental understanding of these terms. Does the project method represent an entirely new development or simply a new term for an old method?

What is a project? The essential feature of the project method is that it provides for useful, thoroughly motivated application of knowledge and makes such use of knowledge a part of the learning, or teaching, process. A project is something to be done requiring constructive or creative ability. It may be manual, and this is the original and best type of project work; such as making a library table or raising a field of corn. To be a project it must be based upon a problem involving study and learning and be carried through to completion in a way to answer the questions involved in the original problem or problems. But there may be projects in subjects like history or geography upon the problem type of material, but not involving manual doing. The doing, in this case, would be such as organizing or carrying on a state senate or a constitutional convention. But there must be doing of a constructive or creative type.

Purposeful act, problem, project. Some writers are using the term "project" as if it were synonymous with purposeful act or problem. This is manifestly a loose

type of thinking. The purposeful act involves interest, understanding, and choice. It is a motivated situation, but a purposeful act is not of necessity a problem nor a project. If a child become interested in a poem, such as "The Light of Stars," understands its meaning quite fully, and chooses to memorize it, he is certainly carrying out a purposeful act. If the work has been well handled, we may conceive that it is a thoroughly motivated situation. The child wants to commit the poem in order to have it at hand for reciting at home before the fireplace or as he strolls about in the woods or when on a camping trip. The poem has appealed to him. But there is no problem here because it is not the problem type of material, nor is it a project because it does not involve the doing of something requiring constructive or creative ability.

A purposeful act or a motivated situation in the problem thinking type of material is a problem. It is a better problem if conceived on a large plan — as large as the subject and the maturity of the student will permit. It is better also if it requires considerable time for solution. In any case, it will require the collection and organization of data, sifting, comparison and contrast, and a conclusion as to the correct solution. But even a thoroughly motivated problem is not of necessity a project. The problem may be solved in thought only, while a project requires the completion of some objective piece of work based upon a problem or a series of problems. The difference is that the problem solution may end in thought, while the project can end only with the successful completion of an objective unit of work. The question "Why are there periodical famines in India?" may be made so to appeal to the interest and understanding of a class that it becomes a real problem. The solution

requires the careful collecting and weighing of data, but when the solution is reached it is merely a solution in thought. No project is possible in this connection with most children.

It is apparent from the above discussion that the project is the third step in the series and more conclusive than either of the preceding steps. It is a purposeful act. It is usually, although not always, based upon the problem type of material. But regardless of the type of material it always involves a problem. However, it goes further than a mere problem, in that it requires doing as well as thinking. The following list shows project possibilities in different subjects, all of which involve (1) a purposeful act, (2) a problem, but in addition (3) something to be done, and so require constructive or creative ability:

Agriculture. Raising a corn crop or handling a litter of pigs from breeding to marketing.
Manual training. Building a corncrib, a hoghouse, or a library table.
Home economics. Making a school dress or preparing a luncheon.
Physics. Erection of a wireless outfit.
Botany. Charting the weeds of a community and planning and executing a campaign of eradication.
Geography. Making a booklet on Southern States as described in chapter VIII.
Literature. The dramatization of "Rip Van Winkle."
History. A constitutional convention, a state senate, or a Thanksgiving pageant.
Arithmetic. The organization of a stock company.
Art. An illustrated booklet or a picture.
Latin. The celebration of the Saturnalia.

It is doubtful if the Latin project noted above, "The celebration of the Saturnalia," is really a language project. It is more nearly a problem in history and

Roman life worked out into a project. In any case it must be admitted that the above list of projects tapers off just a little. The last instances are not quite so clear as the first. If we were to go just a step or two further we should be entirely away from the project. The mere enjoyment of a poem in literature is not a project, although it may be a purposeful act and thoroughly motivated. A choice on the part of a pupil to bring up his addition combinations is not a project, although it may be a thoroughly motivated situation. A project is, therefore, a limited term — not as broad as problem, although involving a problem; not nearly as broad as purposeful act, although it is always a purposeful act.

Is the project method applicable to all subjects? In order to answer this question it is necessary to analyze the various kinds of subject-matter taught in the schools. At least three types of subject-matter are generally recognized: the problem type; the drill type; and the appreciation type. By the problem type is meant subject-matter such as is encountered in history, geography, science, agriculture, home economics, or manual training. This type of subject-matter involves not chiefly the use of the memory, but chiefly the careful thinking through of a problem looking toward a final solution. The purpose of history is not chiefly to store the memory with facts, but rather to give a working method for the solution of problems in politics and life in the past and in the present, with emphasis upon the present. The purpose of geography should not be chiefly to store the memory with textbook facts, but rather to give a working knowledge of the economic and commercial relations which an individual or community sustains to the rest of the world. So in science — it is not chiefly to know

but rather to have a useful knowledge that enables the person to think through and understand any situation which he may encounter or to solve the scientific problems which come up in daily life. The same is true in agriculture and in home economics. The scientific principles underlying these two subjects should be understood in order that the work on the farm, in the kitchen, or in the sewing-room may be carried forward with a right and intelligent application of the principles involved. The same is true of manual training in its higher phases. To secure balance, proportion, harmony, to apply principles in producing one of the larger projects, these become real problems in the higher phases of manual training work.

Without any doubt at all, projects can be undertaken in any of the subjects involving chiefly the problem type of subject-matter. In history, the organization of a constitutional convention, a Republican national convention, a State or United States Senate, these undertakings involve the essential features of the project method. They provide for useful, thoroughly motivated application of knowledge and they make such use of knowledge a part of the learning process. No one will deny that the same opportunity obtains in geography, science, agriculture, home economics, and manual training. In geography, for instance, a real project, although difficult except for advanced pupils, would be a proposed plan for the redistribution of the meat-packing plants of the country so as to reduce transportation charges. In science, the planning of the heating and ventilation system of a home or of a schoolhouse is a real project and will involve a better teaching of the subject of heat in physics than is usually secured through the ordinary textbook method. In agriculture, the project method

has been fully accepted in all Smith-Hughes schools. The boy studies his books and bulletins as much as ever, but the carrying out of a farm project involving the raising and feeding of a litter of pigs, the raising, harvesting, and marketing of a crop of corn, etc., is relied upon to give application of the principles and to instill them in the mind of the pupil in such a way that they become a part of his experience. In home economics, girls are no longer asked to make samplers as a part of the sewing work. Instead they are given a worthwhile project, such as the making of a kitchen apron or a school dress. In manual training the boy immediately begins to plan for something which he wants to make for his own room, for the school, or for some other useful purpose. It is true that in both sewing and manual training, the pupil may need to stop and work for skill before proceeding with certain parts of an undertaking. But the project method is relied upon to give motive and to dictate the major part of the work of the pupil.

The drill type of subject-matter is represented by work in writing, spelling, the addition combinations or multiplication tables in arithmetic, and to a certain extent also by the mastery of the use of the needle or sewing machine in sewing or the mastery of the tools in manual training. There are here two types of drill material, one looking toward the memory of facts and the other seeking the development of manual skill. It is doubtful if projects can be conceived to advantage as long as the work is confined strictly to the drill phases of subject-matter. True, motive can be developed and application can be anticipated, but when the work is carried to the project stage, other elements have entered and the chances are that the problem type of material is involved.

By appreciation type of subject-matter is meant the subject-matter involved in music, art, literature, foreign language, mathematics when not studied for the purpose of use, certain phases of many other subjects, even of science and history, and any other type of subject-matter which is mastered simply for the joy of knowing without any purpose to apply to the solution of life problems. The beginning work in music, if it involves rote singing or the mastery of the technique of reading music, involves very little appreciation. In fact, it is simply drill work. The same is true of the beginnings in art work. The student must learn to use the pencil, the crayon, or the brush. The same is true of the beginning work in a foreign language or the beginning work in almost any appreciation subject, but gradually, as the student gets further and further into the subject, if it appeals to his fancy or his imagination or his mode of thinking, or whatever it is which determines appreciation, then he gradually reaches the point where he can enjoy the productions of others in these fields. He has reached, therefore, the stage of appreciation. He may do the same thing in literature, in history, in mathematics, or even in a foreign language.

From the above discussion it is evident that project work can never replace all other types of school work. There will still be need for the appreciation type of work, for the drill type of work, and even in the problem thinking type there will be much of the work which cannot truly and with sensible economy be developed into projects.

May projects be undertaken in the appreciation subjects? It is quite doubtful. The enjoyment of a picture or a sunset is not a project. The painting of a sunset is a project, but manifestly the great majority of pupils

will never reach the stage of conceiving projects in appreciation subjects. At most they will do merely an exercise. Well-conceived projects will be left for the artist, the author, or the very few persons of unusual ability in the particular fields — those who can execute something which will be appreciated by the masses. In general, therefore, it seems that appreciation subjects involve in their beginnings drill, and in their endings projects for a very few of the most gifted. However, behind the project in appreciation material is a problem. That is, the artist in producing a painting has a problem for solution in color, and the painting is therefore a project — an expression of the problem just as in the problem thinking subjects. But as long as the work with the appreciation type of material is confined to appreciation, there can be no project.

Is project work to replace drill? The correct answer to this question is "No." Drill, properly motivated and based upon the right technique, is the most effective method of handling certain subject-matter. The essential technique involved in a good drill lesson may be briefly noted under the following points:

(1) The work should be thoroughly motivated for the child.

(2) The child should understand what he is to do and why he is to do it. The child constantly asks "Why?" The teacher should anticipate that question. The child should at all points know why he is doing a particular piece of school work. In a democracy no one should question this statement. We are not training slaves or subordinates. We are training free American citizens — kings in their own right.

(3) There should be repetition with attention. When there is motive, when the reason for the work is under-

stood, and when there is attention, repetition is one of the best drill devices. Repetition does not replace association as a memory process, but after proper associations have been made and when all other conditions are properly met, repetition is an effective method.

(4) Provision should be made for holding attention by variety of procedure, time limits, emulation, competition, games, etc.

(5) All of the members of the series should be included in the drill, but

(6) most of the time should be spent on the more difficult members.

(7) The drill should be systematized.

(8) The time space between drill periods should be gradually lengthened.

It is evident from the above discussion that the project method has nothing to do with drill material. When it is necessary to master drill material, the drill method is the correct one to pursue. Drill has a special technique of its own and that is the best technique to use in the mastery of drill material. Educators who have sought to abolish drill through the use of the project method have simply failed to analyze the types of material and the principles involved in teaching different types of material. They doubtless have confused the demand for the motivation of drill with the project method because a good project is always highly motivated. The modern development of the curriculum has also shown that the relative amount of drill material needed in the schools is much less than was formerly assumed. Even in the subject of arithmetic recent studies have shown that the amount of drill work required is relatively small, although essential. The significant development in arithmetic is the conceiving and working-out of motivated

problems or, in certain cases, projects. When the solution of these projects or motivated problems shows the need of drill, then the class willingly returns to drill upon the fundamental processes, simple fractions or other usable material. The outstanding fault in the old type of arithmetic work was that drill was almost the only method used and was extended to such topics as partial payments, cube root, and true discount, for which there is practically no use by the ordinary citizen in carrying forward his social or business relations. The project work, therefore, while not replacing drill or not in any sense abolishing needed drill, has helped to show the relative value of drill in the total teaching process.

What are the advantages of a project in teaching? As Dr. John Dewey has pointed out, experience must be involved in school work if pupils are really taught to think. This means that the school work must either involve the past experience of the child or must provide experience that will make use of the knowledge which the child is acquiring. The project, therefore, comes in as an essential part of the thinking process. Few adults can think in abstract terms with accuracy and precision. It is necessary in working through a worth-while undertaking to make provision for trying out or applying the principles involved. And this is the only safe procedure because no one can determine *a priori* what is going to happen when principles are applied to actual situations.

As the process of providing for application or use in order to test thought is essential for adults, it is certainly much more essential for children. This is the fundamental philosophy underlying the project, and the chief advantage of the project is that it does provide for use. It follows that interest and motive are developed, the work is given connection with life; in fact, real projects

mean that the child is actually working out under life conditions the ideas which he has gained in the schoolroom. The school has, therefore, become life.

No one will deny that under such conditions full provision is made for the self-activity of the child. In fact, all of our principles with reference to pupil initiative, self-activity, application, motivation and interest, are fully realized in a well-chosen, thoroughly motivated project. The project also provides for individual differences among children. Many projects are individual undertakings. Group projects make use of various individuals of the group according to interest and ability.

What are the essential and desirable characteristics of a project? A good project (1) should be broad in scope; (2) should provide for the application of useful knowledge; (3) should grow out of the interest and expressed desire of the child; (4) should be understood so fully and its value should be so appreciated that the child has adequate motive for the undertaking; (5) should be conceived and largely projected by the child himself; (6) should be carried out under conditions, circumstances, or surroundings similar to those found in actual life practice; and (7) its success may be judged largely by objective standards of achievement.

The project has been quite fully developed in the subject of agriculture, so it will help in understanding the project to note what its agricultural advocates claim for it. The following "Essentials of a Project" were set forth in a recent State bulletin [1] on vocational agriculture:

1. *A plan* outlining, in sufficient detail to avoid later dispute, the procedure; steps in development, when and how materials are to be obtained, and disposal of product.

[1] Connecticut Vocational Agriculture, Bulletin No. 1, Series 1919–20.

2. *An agreement* between student, parent, and teacher based on the plan and setting forth the coöperation expected of each. It should state clearly that the boy shall own or rent his animals, equipment, etc., and shall be allowed all profits after paying proper rental, interest, etc.
3. *Records and accounts* covering inventory, labor cost, expenses, receipts, in sufficient detail to show in a final summary the strength or weakness of the plan, methods of procedure, and adaptability of this type of agriculture to the region. A written report should be required calling for a criticism by the student of his own project, and a statement showing what changes should be made if a similar project were to be carried through the next season.
4. The project should *involve the principles taught* in the classroom.
5. It should *correlate such study* with the best *farm practice* of the community.
6. It should promise *adequate return* for the time and money invested.
7. It should extend through a *natural cycle of development and production.*
8. It should *develop a reasonably efficient amount of skill* in the major processes involved.
9. It should involve *problems new to the student* or involve new and more extensive handling of problems already being worked on.
10. It should develop in the boy *executive ability* to a greater extent than manual skill.
11. It should involve study of the *interrelation* of *two or more enterprises* subordinate to the whole farm business plan.
12. The projects of the class as a whole should be the means of developing a spirit of coöperation and a community of interest among the members of the class, and, so far as possible, a feeling of pride in their accomplishment among the parents.

A project which conforms to these twelve essentials is not a trifling matter. It is a serious undertaking, to be planned with the greatest care and consideration. It is considered a most vital and fundamental part of the teaching and learning process.

The size of the project will vary. No limits can be set. In general, the larger the undertaking, the better, provided the undertaking is of the right kind, so that there is no doubt about interest being maintained and the outcome being such as to justify the effort. At times, girls who plan a school dress grow a little tired of the problem because it continues over for so long a time. However, this is frequently due to the program of studies which assigns sewing to only one or two days in the week. Thus it takes a month to accomplish what would otherwise be completed within a week. The mere extension of time makes the problem seem a long one, and some pupils under such conditions become a little tired of coming back again and again after such long periods, to the same undertaking. Because of the fact that sewing is so frequently taught only once or twice a week, wise sewing teachers have found it desirable to conceive smaller projects. On the other hand, an agricultural project which extends through the season or entire year, when wisely directed by an inspiring leader, is not too large an undertaking. Other things being equal, the larger and more significant the project, the better, provided it meets fully the other essentials of a good project.

Are there dangers in the use of the project method? Apparently there are dangers if the project method is not properly understood and if its limitations are not comprehended. Some writers upon the subject would evidently replace all other school work by projects.

They would do away with all drill. They would make doing on a project basis a part of all learning. This is a type of heresy which is common. People are generally inclined to see one thing at a time. There is no reason, however, why this should be true. Teachers and educators should recognize that for the teaching of certain types of subject-matter the project is the most effective instrument. In teaching other types of subject-matter, however, the project has no place. The chief danger in the project method is failure to understand it and its limitations.

Many or few projects? The loose type of thinking which has confused the well-conceived project with the problem or the purposeful act on the one hand, or with the exercise, the illustration, the application, the experiment, or the practicum on the other hand, has led to the effort to increase the number of projects and even to the attempt to conceive a project for each important topic taken up in a study.

The experience in the industrial subjects where the project has received the most typical development indicates that it is much better if the boy undertakes a man-sized project like raising a field of corn and makes that his one farm crops project, than if he were to undertake little plots of corn, oats, wheat, rye, and barley, for instance. The latter situation would be properly designated as school exercises. The first is a real man-sized project appealing to the imagination and the dignity of the boy. At the same time it involves the essential principles of motivation and many elements which are common to all farm crops undertakings. These common elements are easily apparent.

If there are ponds, sloughs, or draws needing drainage, the problem is a fundamental one equally applicable if

the boy were to undertake a banner crop of oats or wheat. In the study of fertility, the question of proper rotation, application of barnyard manure or other methods of building up humus-content and necessary plant-food elements when applied to corn, will answer the same questions for any other crop with only slight modifications of details. Likewise, the questions of breaking, depth, time, etc., of the preparation of the seed-bed, and of planting, involve questions that, while they do not carry over in full force to other crops, do offer considerable help on other crops and furnish thoroughly satisfactory motivation when these same topics are taken up in connection with other crops. The problem of cultivation of corn is not generally applicable to any other crop. The method of harvesting and the problems involved are quite different for corn, but we know from experience that the handling of one fundamental project does furnish adequate motive for the study of other farm operations. In fact the boy is taking on all of the serious purposes of the actual farmer. He is beginning to see the reasons for doing things and the relative value of different procedures. In short, he is becoming a scientific farmer through the intensive study of one large project. He is not content, therefore, to carry forward other farm operations as he must do in helping his father on the farm, without raising fundamental questions as to the why, the best method of procedure, the possibilities of increasing crop yields, etc.

Can the work be as well done? This seems a superfluous question if the project method is applied to its appropriate material and if no attempt is made to apply it to drill and appreciation types of material where it has no proper application. The problem type of material can certainly be much better handled when made

significant and motivated through the use of worth-while projects. There is no loss. There is decided gain. However, if the teacher or superintendent can have but a single idea at a time and attempts to organize all of his work on a project basis regardless of the character of the work, he is going to encounter difficulties and lessen the efficiency of his school system. The work of Meriam at the University of Missouri is a good illustration of the reorganization of school work on a worth-while basis. There is interest; there is motivation; there are objective undertakings; there are problems; there are even a few projects carried forward. A careful review of the results of that type of teaching shows that grade pupils who have done this type of work may later enter the high school and succeed.[1] In fact, both in the University and the city high school of Columbia, Missouri, the pupils who had done this type of work in the University elementary school secured grades which averaged above the grades of other pupils who had done the regular work in the city schools.

The Missouri University elementary school is doubtless the nearest approach to the general adoption of the project method in school work, and the results are satisfactory. The Gary plan makes some use of projects in connection with a larger socialized program, but the Gary system is weak, according to survey reports, in not providing drill on drill material, and in not providing for closer organization and more adequate supervision. In the subjects of agriculture, manual training, and home economics, where the project method has been applied longest and most fully, the results are entirely satisfactory. The Massachusetts home project plan of

[1] See Meriam: "The University of Missouri Elementary School Experiment," *Journal of Educational Psychology*, June, 1915.

teaching vocational agriculture has become famous throughout the nation, and is being applied in adapted form in almost every State of the Union.

The project method is based upon sound principles of psychology and education. It is a logical outcome of the acceptance of the doctrine of interest and the principles of motivation. When properly understood and when wisely applied to its appropriate subject-matter, there is no loss, but much gain, in the use of the project method. The work is better understood, more easily and more fully mastered, and longer retained.

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