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ABSTRACT

This book, published in 1941, is a collection of articles that emphasize the value of teaching the "tool" or basic skills: reading, elementary mathematics, language arts, "and their subdivisions." The book emphasizes the value of using the environment and experiences of rural children in teaching these subjects. Chapter 1 describes the importance of educational basics, as described by contemporary research. Examples of programs and classroom methods are offered. Chapter 2 contrasts the principles justified by modern psychology against some of the guesswork opinions of child development and tool-subject education with examples of application of these principles to learning situations. Chapter 3 focuses on 5-year-old children in small schools, examining the characteristics and the needs of the group and suggests how these needs can be met by small schools. Chapter 4 examines reading in the small school and discusses reading readiness, motivation, early reading activities, drills, and trends in reading instruction. Chapter 5 focuses on teaching language arts in small schools, discussing the advantages of rural children in this area. Also examined are language-arts development, the role of language arts in integrated learning, and language arts in the daily school program. Chapter 6 discusses children's development of understanding of numbers, offering examples of numeracy exercises and drills. The document includes a bibliography of approximately 100 items. (TES)

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THE DEPARTMENT OF RURAL EDUCATION
NATIONAL EDUCATION ASSOCIATION OF THE UNITED STATES

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and the
TOOL SUBJECTS IN RURAL AREAS

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TOOL SUBJECTS IN RURAL AREAS

YEARBOOK 1941

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CHILD DEVELOPMENT AND THE TOOL SUBJECTS IN RURAL AREAS

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FOREWORD

The "three R's" have lost none of their ancient importance in the modern school. They merely have a new significance. They are now recognized for what they are and in reality always have been; tools for acquiring new knowledge, for enjoying new experiences, for building new attitudes, and for self-expression and social communication. They are valuable only to persons and persons are not valuable in terms of them. They have meaning and use only in terms of the experiences and needs of the children who master and use them.

Perhaps the most important development in modern educational psychology is the discovery and utilization of the fact that the acquisition of new habits and skills, and the learning of new symbols take place in proportion as they are associated with or necessary to enjoyable and meaningful experiences and activities. That children learn in terms of their own experiences is an obvious but much overlooked fact. The authors of this yearbook follow consistently the idea that the tool subjects will be much more thoroly and permanently mastered if, by the utilization of children's experiences, they are given meaning and presented as necessary means for acquiring desirable ends.

The whole viewpoint of the yearbook is well represented by the chapter on the five-year-old child in the small rural school. One of the chief jobs of the teacher in dealing with these young children is to keep them in situations that build up a "readiness" for using reading, writing, and numbers. If that is not accomplished harm may be done and, unless the home environment is very poor, the children would be far better off at home than in school. Similarly with older children; effort to obtain a mastery of the tool subjects in a social "vacuum" (relatively speaking) and without a sufficient "apperceptive mass" is likely to be worse than futile.

Thruout this yearbook the utilization of the environment and experiences of rural children are emphasized as essential to giving meaning to the tool subjects. The advantages of the rural environment and of the situation in the small school are given proper emphasis. True, the small school presents problems, but it also presents advantages and opportunities for successful teaching. It is hoped that the ideas herein presented will be stimulating and useful to those teaching or those preparing to teach in rural schools as well as to rural school supervisors.

HOWARD A. DAWSON

Director of Rural Service

National Education Association

February 6, 1941

Chapter I

THE PLACE OF THE TOOL SUBJECTS IN MODERN EDUCATION

THE TERM "TOOL SUBJECTS" is used to designate those basic subjects of reading, elementary mathematics, the language arts, and their subdivisions. The ability to use adequately the skills implied in these subjects is considered important in all cultures and hence in all systems of education which transmit culture from one generation to another. Simple civilizations have found it expedient to develop economical methods of communication thru pictures, signs, or notches on a stick. The more complex the civilization and culture, the more necessary it has been for man to refine his method of preserving and communicating his ideas. Our complicated system of letters, words, and sentences, our skills in writing and printing, and our ability to transmit ideas by mathematical formulas are no accidents. They are monuments to the genius of man.

Nearly all systems of education have emphasized these basic subjects in their curriculums. Initiation ceremonies in the simplest of cultures, for example, nearly always included the transmission from the old men to the young what was known by them about the communication of ideas. Indeed, the simpler the culture the more likely was the formal educational process to emphasize these tool subjects. This is not to say, however, that the tool subjects are considered unimportant in the modern complex culture of the present. These subjects remain fundamental to the education of young children and basic to the educated man. Moreover in the small schools, largely located in rural areas, the adequate teaching of these subjects is a special and difficult problem. The nature of the skills which make up the tool subjects requires individualized treatment. Yet the small school composed of children from five years to adolescence makes such treatment complicated and difficult. The teacher is frequently faced with the necessity of making choices between the needs involved in laying down strong foundations for young children and in preparing the older ones for high school. Community pressure more likely than not operates in favor of preparing the older children for high school. Consequently the younger children may be left to shift for themselves with short "recitations" and unsupervised exercises in work books, both practices holding possibilities of great harm.

In the past the teacher in the small schools tended to emphasize the tool subjects, as far as time schedules were concerned, for both the younger and older children. There were many reasons for this which are beyond

the treatment of this chapter. In modern education the emphasis is none the less significant; it is merely different. In the modern school the tool subjects are placed in a different perspective than formerly and a new emphasis is placed upon them. In order to understand the place of these tool subjects in modern education, however, it is necessary to understand their educational status in the past.

When the first elementary schools were established in America, the curriculum consisted almost wholly of the "three R's." This condition probably resulted from two causes. In the first place, the agricultural environment of the pioneers supplied many of the features now considered the responsibility of the schools. Thus vocational skills, health, character education, and many other features of modern education were considered primarily the responsibility of community institutions, notably the home and the church. Teachers were left free to pursue what was then considered the chief responsibility of the schools, namely, to give children the essential skills in reading, writing, and ciphering. In the second place, the simple life of the pioneers required only a minimum of learning. If a child could read, figure, and write he was considered well equipped to assume the duties of adulthood. Beyond these skills, it is true, lay formidable requirements in Latin, Greek, and higher mathematics, but these were for the young men who aspired to the professions, particularly those destined for the ministry and the law. For the average man skill in the "three R's" was considered sufficient to meet all of his needs.

The early elementary schools not only emphasized the "three R's" almost to the exclusion of other subjects but there was developed for them a teaching technic which further characterized this pioneer period in education. This technic consisted largely of drill. In modern education the term "drill" has come to have many meanings; it may designate forms of instruction or it may refer to theories in learning. The pioneer teacher, however, had no need to clarify terms because she had almost no theories about learning. She adapted drill to the "three R's" largely because the technic was economical and efficient. The technic consisted of requiring children to repeat isolated facts or processes until recall in each was automatic and correct.

Later the bond theory of learning with its accompanying law of exercise gave to teachers justification for their faith and did much to establish this technic firmly in the field of the "three R's." Methods in teaching, outgrowths of theories in learning as promoted by many normal schools, also helped to entrench this technic in the elementary school. An examination of the professional books on the teaching of the "three R's" published in the nineteenth century will bear out this statement. A handbook of directions for the teaching of reading published as late as 1894 is a case in point. The reading lesson for the children was as follows:

I see
I see you
I see
See, see, see
See me
Do see
Do see me

Do you see?
I do see
Do you see me?
I do see you.
Do I see?
You do see.

The directions for the teaching of this lesson fitted perfectly the drill technic. They were:

Begin with S. Write it on the blackboard and tell children what it is. Give sound, not name (no letter names are to be taught during the first half-year). Have them practice it a little time, then leave it. Many times during the day ask them unexpectedly what it is. Next day teach another letter and in the same manner.

Use of drill cards—Stand in one of the front corners, where every member of the class can see distinctly, holding in your hands the cards for all the letters thus far learned. Taking the scholars in order show each a card. If he does not name it *instantly* (interpret the word literally) call out "tell" and have the others prompt him. If the proper rate of speed is maintained you can get around a class in two or three minutes.



Enriching the Curriculum

Professional books of the same period which dealt with the other two tool subjects show depressing similarities. An analysis of such teaching technics reveals a philosophy of education and a theory of learning at variance with those now current in modern education. These differences may be somewhat loosely summed up as follows: (a) a new conception of subjectmatter and its relation to children; (b) a modified theory of learning which emphasizes purposes in learning and the importance of meanings and values rather than the mere repetition of facts; and (c) the principle of readiness.

A new conception of subjectmatter—It has been frequently said that the traditional school emphasized subjectmatter instead of child development, and that subjectmatter was considered important for its own sake; that it was an end in itself. This is to say, that the successful mastery of subjectmatter was the primary purpose of education. Leaders in modern education reject this theory. They believe that the all-round development of children is the primary concern of education and that the experiences which children have with subjectmatter are merely means to this end. In the modern school, however, children have many other experiences than those to be had in books. They paint, dance, act, sing, listen to music, play games, take trips, write stories and poetry. Children have experiences with and in these activities—something different from mere passive memorization of facts. On the other hand, subjectmatter is one of the best known ways of expanding, enriching, and reorganizing experiences for maximum child development. Therefore, the selection of subjectmatter in terms of the situation and the interests and needs of the children is one of the most important tasks of the modern teacher. Subjectmatter is implemented for children almost wholly thru the tool subjects. These subjects, then, are very important in modern education. They are truly the functional means of making experiences more meaningful.

If the traditional teacher accepted subjectmatter as the general objective in education, she was at the same time guilty of another error against children. Much of the subjectmatter learned was not even worth the learning. It consisted on the whole of a large number of unrelated facts and independent skills. The senseless repetition of the word "see" in the reading lesson quoted above, the emphasis upon perfection in writing nonsense lines, such as "Ibex, a Mountain Goat," in copy books, and the monotonous counting of one, two, three, in arithmetic are illustrations of how subjectmatter can and did ignore the needs and the interests of children.

In modern education subjectmatter, even in the tool subjects, is largely derived from the experiences and interests of the children. Researchers have attempted to establish the things in which children are interested at different age levels, and upon their findings subjectmatter for children is developed. Readers are built upon these interests so that the child begins

his interpretation of reading symbols with materials within his experiences. Modern children begin and continue their reading in terms of their own background and interests. They read about their home, the animals on the farm, the work of their parents, their own play, games, trips, picnics, and all of the exciting enchantments present in the world of children. Later, these children may read far afield for enjoyment and information, but a host of writers for children yearly make available books to meet these needs on varying levels of interest and abilities. Likewise, the modern teacher begins to teach arithmetic in terms of the number experiences which children have had before they come to school. At a very early age, sometimes as early as two years, children need and use visual and oral skill in numbers. This is particularly true of farm children whose environment combines the features of a cooperative business and a home. Eggs are counted, chickens are marketed, corn is measured, and fruit is crated. Activities such as these provide excellent backgrounds for number skills, a fact of which the rural teacher is too infrequently aware. Rural children participate daily in these activities and nearly all of them enter school with oral ability to count. Many have already developed fractional concepts, and some conceive of the combinations of fractional things into wholes. While modern arithmetic textbooks are not written specifically within the experiences of farm children, few of these books ignore them because many of the activities of the farm are universal ones in which all children engage in varying degrees.

Not only is subjectmatter developed in the modern school in terms of the interests and needs of children but it must also serve another purpose. It must be functional, that is to say it must serve children. The role of subjectmatter in the modern school is thus reversed. Children instead of serving subjectmatter are served by it. In the language arts children begin writing by printing their own names, by keeping a daily bulletin of news, by describing an excursion to a neighboring farm or the arrival of a new calf, and by the recording of adventures which lie in a walk thru the April woods. Later, they may write letters and reports, keep a diary, record research, and develop a bibliography; but whatever the children write it will have meaning and it will be functional.

As soon as a child can interpret written symbols his reading is put to use. He reads to learn how to make a silo, how to build an aeroplane or a barn. He reads to answer the questions raised on excursions and to solve the problems developed in his social studies. He extends his own experiences vicariously thru books so that peoples and lands unknown to him become near and familiar. He reads for his own pleasure, and finally the magic and delight of books become his own.

Very early the child begins to use number symbols. He makes measurements in the construction of a barn, silo, or aeroplane. He helps to make budgets for school excursions and to keep records of moneys spent. He

learns to spend money carefully by buying supplies for school parties and hot lunches. Arithmetic, reading, writing, and speaking are tools for learning, but they are tools with double edges. From research and experiences the modern teacher has come to believe that the experience had in using these tools is one of the best known ways for developing skills in their use. This statement raises the question of method in developing the tool subjects with children which will be discussed in the next paragraph.

A theory of learning which emphasizes meanings and values—The bond theory of learning and the law of exercise have been referred to in the previous paragraphs which reported on the historical treatment of the tool subjects. The psychological principles upon which these laws operate are too well known to be repeated here, but a brief review of them may be helpful. In brief, the bond theory of learning holds that all learning consists of the establishment of bonds or connections between specific stimuli and specific responses. The law of exercise is basic to the bond theory; indeed, each gives the other strong support. Bonds are strengthened by exercise. Memory, therefore, depends upon the strength of the connection, and the connecting thus becomes of primary importance. The law is in effect merely repetition of a reaction until it is established or learned. Under this conception of learning it was held that to repeat a reaction was to learn it. These theories were faithfully followed in the classroom and the tool subjects lent themselves particularly well to their practice. Reliance was placed in flash cards, charts, and other types of rapid drill exercises. There was a widespread use of workbooks, a practice which apparently met one of the pressing needs of the teacher with more than one grade and hence was widely adopted. Workbooks, as brought out elsewhere in this yearbook, are not bad *per se*; they meet one of the most pressing needs of the small school. They merely become bad when they are badly used, and this happens when children spend long, unsupervised periods on the drill exercises characteristic of them. Frequently inaccuracy, wrong methods, and confusions are the results of such use.

New theories in learning as promulgated by the Gestalt psychologists, and the unhappy experiences of teachers with practices which stemmed from the law of exercise, together with the findings of researchers, finally brought the law under serious scrutiny. The result has been that researcher, theorist, and practitioner have come to question whether the law or its practices have the beneficent results claimed for them. As a consequence some psychologists insist upon a restatement of the law of exercise, while others reject it entirely. Educational leaders thus have come to believe that factors other than repetition enter into learning. One of the factors was suggested above—the method by which a child attacks his problem is frequently more important to learning than the result he achieves. His purposes for learning are also important; frequently more so than his method. Meanings, understandings, and values which are developed in

the learning may be the most important factors of all. "Cease repetition and adopt variation" is the advice of the modern psychologist. "Repetition can at most increase only the speed and accuracy of a reaction, good or poor; it cannot furnish a new way, a better way of doing anything."

In order to understand and interpret situations intelligently one needs many meanings and not a host of automatic responses. Drill alone can never develop meanings and repetition gives little hope for the development of understandings. Under this new conception of learning, therefore, it is our duty to see that children have the opportunity for reacting frequently and variously to the item of knowledge or skill we wish them to acquire. This is the heart of the new theory of learning and the modern teacher adapts her practices to it. For example, instead of placing her reliance for teaching reading in the repetition of words and letters of the alphabet as did her predecessor, she gives her children the opportunities for using words in many different situations and thru many experiences. An analysis of the theory and its subsequent procedures will reveal that the modern teacher places her faith largely in the meaningful experiences which children have. These are primary in learning, but the tool subjects are as important in these experiences as they were in the traditional school. Today they are merely the means to real growth rather than the end product of the educational process. Almost from the beginning children begin to read stories, to listen to them, to write them, to dramatize them, and to tell them. The teacher, by thus giving children the opportunity for many and varied reactions, assists them in developing those meaningful concepts which are basic to intelligent reading. The same principle of variation rather than repetition is applicable to the other tool subjects as well as to reading and examples in variability could be multiplied in them.

The teacher in the small school has unusual opportunities for the provision of many experiences for children, thereby meeting the need for varied responses. Reading may be used further to illustrate this point. In the average small school there are gathered together children of different ages, experiences, interests, and reading abilities. Yet it is possible to find many problems so universal in their appeal to children that all are interested in working on them and thus they solve them together. The pupils of a one-room school in Niagara County, New York, in studying their own neighborhood this year, not only explored their environment together but read together for information and enjoyment. The reading was closely tied to their common problem. The seventh- and eighth-grade children studied the geology of the Niagara Frontier and shared their readings with the whole school. The fifth- and sixth-grade children read aloud *The Story of the Gold Lace Coat*, a historical tale of old Fort Niagara, to the five- and six-year-olds who could not read it for themselves. The third- and fourth-grade children wrote their own stories of dramatic incidents in the historical development of Niagara County and later read and drama-

tized them for a series of morning assemblies. Thru cooperation in writing, dramatics, and reading the children shared many experiences with one another so that in them all of the children were profited.

This tendency to veer away from drill in the tool subjects should not be interpreted as meaning that repetition in learning is disregarded altogether. As pointed out elsewhere in this chapter there is a place for drill in modern education and it is an important one. Drill is recommended for the retention of ideas, processes, and skills, once meanings and values for them have been established; it follows rather than precedes the establishment of these ideas and skills. Drill is also recommended for rehabilitation purposes to counteract the disuse or abuse of skills thru faulty teaching or learning.

The principal of readiness for learning—Upon the entrance of children into the traditional school it was assumed that they were ready to learn to read, to write, and to cipher; were prepared indeed to master the "three R's." The ability of children to read thus came to be identified with the chronological age of six years, the average school entrance age of children thruout the United States. There was a large percent of failures in the first grade and a larger percent of children began to fail as soon as they made an attack upon the skills involved in the mastery of the tool subjects. In the small rural schools the percent of failures in the first grade reached a disturbingly high level. Administrators and supervisors tended to place the blame for this state of affairs upon the organization of the small school, the overcrowded schoolroom, the large number of classes, and the wide range of grades. These factors no doubt influenced the standing of rural six-year-olds but there was another factor which, once discovered, has greatly affected the teaching of the tool subjects and hence all learning in the elementary school. This factor was the principle of learning readiness. The term "readiness" for learning means simply what it says. Modern educators are beginning to believe that children learn most economically and effectively when they are ready for learning. Readiness then is an individual matter and the fact that a child has reached six years by the calendar is no guarantee at all that he is ready to begin reading, writing, and ciphering.

While readiness as a principle of learning has come to be identified with primary reading, experienced teachers think that the principle can be applied to all subjects and to all age levels even into adulthood. We are accumulating proof, for example, that there is a stage of readiness for practice teaching in teacher education, and that some prospective teachers are ready for it and others are not. In the matter of readiness the responsibility of teachers is fairly clear. It is, first, to promote readiness when it is not present and to recognize it when it appears. For approximately fifteen years researchers have been at work devising aids to assist the teacher in the determination of readiness for learning. True, most of this research

has been on the beginners' level but this is particularly pertinent for the introduction of the tool subjects. At first there was a tendency to identify the mental age of children with readiness to read. This was as misleading as the previous attempts to identify readiness with chronological age. Reading-readiness tests have been devised to assist the teacher in determining those children ready to read and these are being used with increasing success. The most widely used of these tests are: Lee Clark Reading Tests, Southern California School Book Depository, Los Angeles, California; Metropolitan School Readiness Tests, World Book Company, Yonkers-on-Hudson, New York; Monroe Reading Aptitude Tests, Houghton Mifflin Company, Boston, Massachusetts; Van Wagener Reading Readiness Tests, Educational Test Bureau, Minneapolis, Minnesota. While these tests are easy to administer and are helpful in planning work for beginners many small rural schools cannot afford to buy them. However, there are other ways of determining when children are ready to read and the wise teacher watches for them. Indeed, the teacher interested in child development watches for these signs whether the readiness tests are administered or not. One of the first prerequisites for reading is that the child is well up to adequate physical standards; that he sees, hears, and uses all of his senses well, and that he has no physical handicaps. A second sign of readiness is emotional stability, as indicated by the adjustment children make to their social group. It is well also to watch the degree of facility in oral expression used by children, for a child who expresses himself easily and effectively already has developed a good speaking vocabulary, which is basic to the interpretation of the printed page. The ability of children to dramatize, to remember the incidents of a story in order and to retell it is another indication of readiness to read. Children may also give evidence of the ability to think, to reason, and to see causes, and these are recognizable at early ages. The wise teacher is sensitive to these signs. They are indications that the children are ready to enter upon so-called formal learning. One of the best signs, of course, is whether or not the child actually wants to learn to read. If he does and is normal, he will read easily and effectively, provided he has the right sort of educational guidance. While the recognition of readiness for learning is important, the teacher need not wait for readiness if it is not present. Fortunately, she can assist children in their preparations for learning. She can do this by providing children with an environment possible of many learning experiences. She will see that her children have trips, that neighbors with interesting things to tell or demonstrate will visit the school, that her children have access to books, to pictures, and to the radio. Moreover, she will see that her children have books on their own reading level and within the range of their own interests. She will encourage dramatic play and release children from inhibitions so that they feel free to express themselves in signs, gestures, and words. In the rural school she will have many assistants, for the older children are im-

portant parts of the school environment. They will assist the younger children in making exhibits, in construction, in making a nature trail, in setting up an aquarium, and in putting on a play. In order to carry forward such activities children must plan, make decisions, observe, interpret, discriminate, and accept leadership. These are the very experiences which bring about physical, mental, and emotional maturity and upon these readiness for learning is dependent. Any experience, therefore, which brings about desirable growth in children is conducive to readiness for learning.

While more attention in the past has been paid to readiness for reading, readiness for arithmetic and for the language arts is equally as important. Moreover, there is increasing evidence that readiness for learning in these areas exists and that it can be used profitably. Nearly all children entering school have used and are using the language arts and arithmetic to serve their own purposes. This is to say, that the normal experiences of childhood call for the use of skills in the language arts and in numbers. Much study has been made recently of the grade placement of number experiences in terms of child development. These studies are in reality studies of learning readiness in the field of arithmetic. The effect of these studies has been to postpone the mastery stages of computations, particularly the processes of subtraction and division, from one-half to one and one-half years. All of this indicates that we have tended to assume in arithmetic, as we have in reading, a readiness for learning beyond the ability of children on the several age levels. As we have more evidence on this important principle of learning we shall be able to attack the problem of the tool subjects with more intelligence and forthrightness.

The purpose of this chapter has been to show the place of tool subjects in modern education by presenting: (a) a brief overview of their historical status and development; (b) a discussion of the recent trends in the development of the tool subjects; and (c) the role of the rural teacher in the adequate handling of these important school subjects. The tool subjects are basic in child development and in the educational process contributing to it.

To assist children to intelligent reading, to accurate number experiences, and to the discriminating use of the mother tongue is a challenge to all people interested in child development.

Chapter II

CHILD DEVELOPMENT AND THE TOOL SUBJECTS

THIS CHAPTER: (a) contrasts the principles justified by modern psychology with some of the guesswork opinions which to some extent influence present attitudes toward child development in the tool subjects; (b) sets forth examples of the application of these principles to learning situations from various schools thruout the United States; and (c) lists some conclusions as to learning technics which need further study and development.

PART I

THE SCIENTIFIC METHOD, MODERN EDUCATIONAL PSYCHOLOGY, AND GUESSWORK OPINIONS

Before stating some of the principles of learning justified by modern psychology it is essential that some attention be given to the derivation of these principles. A cornerstone of present civilization is the scientific method. To illustrate briefly: one batch of steel manufactured without chromium rusts, another batch when chromium is added is rustless. Q.E.D.; Chromium added to iron produces rustless steel. While this illustration is oversimplified it demonstrates in some measure the scientific approach.

Educational psychology uses a like method to discover principles of learning. Such scientific method in educational psychology depends largely on comparing the quality and amounts of learning of two groups of children. One group has the customary way of learning. A second group, in which the learner and teacher are like those of the first group (are equated), has a special method of learning applied. When the same results are achieved over a period of years by different researches, the findings accord with and demonstrate principles of learning justified by the scientific method in educational psychology.

Notwithstanding the emphasis given the scientific method during the last twenty-five years, some teachers still consider demonstrated scientific facts as matters of opinion. An example of such guesswork opinion, which is extreme but which is nevertheless illustrative of the thinking of some teachers, principals, superintendents, and laymen, is offered. A year or so ago a supervisor on entering a primary classroom was shocked to find the little five- and six-year-olds spelling reading words in a primer letter by

letter.¹ At a conference later in the day, when the question of the letter method in reading for beginners was discussed, the supervisor received another jolt when the teacher, the product of a reputable teachers college and with experience gained in excellent school systems, said: "I tried progressive methods in reading for beginners when I was in Blank County,² Blank State, but I saw that such methods were not successful, and therefore I now use the letter method and with splendid results."

This reply showed that this teacher does not understand or believe in the scientific method in education. Her guesswork opinion was just as valuable to her as all the studies on reading which have been ably reported in the yearbooks of the National Society for the Study of Education in 1924 and again in 1936. Another common guesswork type of error into which this teacher had fallen was that of judging the results of the use of a primary technic within the same or the next year. The result of errors, such as the use of the letter method, in the teaching of beginning reading, may be expected to appear in the third and fourth year where only rapid phrase reading will enable the children to get the sense of the sentence and paragraph. The language needs of these children and their language status—their ability with language—had been ignored in favor of a worn-out tradition satisfying to a teacher who had had four years of a teachers college but had failed to catch the foundation element in modern education. *Fundamental to the proper approach to learning situations—to child development and the tool subjects—is an understanding of the results achieved by the scientific method as contrasted with the guesswork opinion of individuals.*

Extreme as the viewpoint quoted above may seem to be it is in a sense representative of similar opinions held by some teachers, principals, superintendents, and laymen. These guesswork opinions are not always so obviously fallacious as that cited above on letter reading in books by beginners, but nevertheless equally shallow reasoning is used with children at various ages; the achievement status and needs of children are ignored as well as the scientific studies on the problem at hand. Too often such differences of opinion which should be settled by references to the type of study mentioned remain "your opinion and my opinion" rather than the right judgment. So much for the scientific method as opposed to guesswork opinion. Before stating the scientific principles justified by psychology, several paragraphs will be devoted to a second general approach to child development.

¹ The present trend is to give book reading to children of a six-year mental age, which means the latter part of the first grade or the beginning of the second grade for most schools. Much oral work and stories of experiences precede book reading.

² A county in which high salaries and high standards secure well-prepared teachers. Such guesswork opinions are not entirely confined to the field of poorly prepared isolated rural teachers!



Children Learn thru Doing Their Own Measuring

One of the neglected tool subjects is oral language. As one keen observer has put it, "Some of our elementary and high schools might as well be correspondence schools; all the student does is to read and write." For three very good reasons oral language deserves an important place in the list of needed tools: first, because it is in the background of the child before he enters school; second, because it is the child's means of checking his reading, writing, and arithmetic; and third, because of the large share which radio and multitudinous discussion groups are giving to oral language in modern life.

Examination of the scientific findings as to the child's growth in language before entering school throws light not only on the development of language but on the characteristics of growing children. One study³ gives the average vocabulary for three-year-old children as 896 words; describes four-year-olds as playing with language; while five-year-old children are approaching, even if in a limited way, the use of language as adults use it.

What relevance has the oral language ability of preschool children to the learning problems of school children? To the author, this vocabulary acquisition is a clear-cut demonstration of the child's inherent power of

³ Gesell, Arnold, and others. *The First Five Years of Life*. New York: Harper and Brothers, 1940. p. 202.

growth and of the way that growth takes place. Language in these years (as it should in other years) comes thru the child's desire to increase control of his environment—to get results. The language lesson is a hop, skip, and a jump alongside of, and as an aid to getting "drink of water," "drink of milk," "go in car." The large and measurable language gains previously cited are the results of language used in life activities and to further the purposes of the child. The social use of words is usually pleasing to the child's associates, altho frequency of exposure probably affects judgment as to whether the innumerable questions of the young child are tiresome or interesting and amusing. Such questions by three-year-old children have been shown to be more relevant and less disconnected than is commonly believed.

The vocabulary acquired by the child of from three to five years of age shows him to be seeking continually to increase his own ability. His oral vocabulary when he comes to school, his concepts, his questions reveal his seeking for growth. He needs a stimulating environment and wise guidance, and the teacher is a guide, a cooperator with the child's power for growth. The viewpoint justified by educational psychology is in contrast to that of the art supervisor who said, "The teacher has to put something into the child before she can get anything out." Actually the child, thru his home and community life, has much within him before he approaches the teacher. To help him to add to what he has is the teacher's job, but the quality of learning is high when it relates that which lies ahead to that which has gone before. In this sense there is not schoolwork *and* community life; schoolwork grows naturally from the life of the individual in his family and community.

In the modern school the child sees that he can further develop his ideas and can improve his relations with his fellows by better speech, by reading, by writing, and by ciphering; the acquisition of the tool subjects accords with his all-round development. Guesswork hazards the opinion that "to get anything out of children something has to be put in," but the pre-school child's development as well as the older child's undirected summer play on city streets or in the country shows him as making his own life meaningful with activity and even shows his power to organize socially without direction. These statements are not meant to indicate that with wise guidance growth will not be richer and more well rounded but they are meant to indicate that teaching separated and apart from the child's whole life and unrelated to his ways of growth is inefficient and stupid. What is sense to the teacher may be nonsense to the child unless it be related to his experience and his thought.

The tools of the intellectual processes should be an extension—a co-ordination—of the individual's actions. Unless this be the case the thinking of the individual—his use of intellectual skills—is likely to be separate from reality. Individuals whose education reflects the separation of the

tools of learning from action find it easy to avoid action based on their thinking. The apparent learning of an occasional group of children, raised to a high degree of rote skill, may disappear entirely within a comparatively short space of time. Unconnected with the child's life as a whole, unused outside of school practice, and really unmeaningful to the child, such learning might as well be nonsense syllables. While there are so many useful fields in which there is plenty of difficult material for learning, wasting time on the difficult-useless, the abstract, or the obsolete is so unjustifiable as to seem ridiculous.

The acquisition of skills, of social ideals, and of all kinds of behavior is a part of the complete development of the whole child. Emphasis on the unbalanced and superficial skill, whether achieved by kindly or martinet methods, may result in considerable maladjustment for the student, maladjustment which shows itself in physical and moral weakness. Strenuous effort and difficult but understandable goals may be justifiable, but forcing achievement of ill-understood and useless objectives even by the kindest persuasion is likely to be futile if not harmful. Balanced growth in usable achievement remains the goal. These instances and examples are not esoteric, nor so untypical as to be beside the point. In public and other types of schools such cases as these are pointed to with pride by teachers and others. Instances could be multiplied where there is a lack of realization that effort itself is not necessarily educational.

In keeping with the discussion so far, and indeed, partly in summary of it, fundamental principles justified by modern educational psychology are listed.⁴

1. *Individual differences*—There are differences among individuals and altho common purposes and activities must be pursued in common there should be sufficient variety and division of responsibility to provide for individual needs and differences.

Example: At one level of development where language difficulty is present because of racial background a child may talk more unselfconsciously and more freely in English about a drawing he has made than if he must construct sentences about a concept in terms wholly symbolic. Such a skill in drawing or in music may offset the discouraging aspects of difference and enable the individual's contribution to give him a secure tenure in his group—the essence of democracy.

2. *Transfer of learnings*—Learnings derived from elements in one situation may sometimes be transferred to another situation where the same elements are present. Nevertheless, the highest efficiency comes from learnings acquired in the way in which they are to be used.

⁴ Paraphrased from the author's recent curriculum study—*Region and Culture in the Curriculum of the Navaho and the Dakota*, Federalsburg, Md.: L. W. Stowell Co., 1940, p. 264.

Example: Engaging in correspondence is a way of learning letter writing. Perfecting the formation of individual letters in the alphabet and learning to spell are a part of the process of learning to write to people. To encourage writing one second grade maintains a school post office, with regular collections and deliveries to all elementary- and high-school rooms.

3. *Practice*—Readiness and results (the law of effect) are considered to be even more important in learning than earlier psychological research indicated. Practice for some purpose accepted by the learner which has satisfying results is the best practice. Mere repetition, without these qualities of interest and readiness, is low in learning value.⁵

Example: A seventh-year group carrying on a seed selection project labeled their seed envelopes poorly. The principal visiting the class and commenting favorably on one well-labeled envelope stimulated the group to ask their teacher to show them how to relabel. In one lesson the progress made by this group was astounding. These results led to an assembly program and an exhibit of writing requested and sponsored by the students themselves.

4. *Satisfaction promotes learning*—Group approval as well as material satisfactions help the individual to measure success. Those activities leading to satisfying results tend to be continued and to be learned more permanently. Those activities which are pursued with lack of success tend to be annoying and are consequently avoided.

Example: In the post-office project previously mentioned, occasional well-written, well-spelled, well-phrased letters are with the permission of the correspondents shown from one room to another. The appreciation of the group has made teachers, who were somewhat skeptical of the value of the project, willing and anxious, after several years of trial, to continue the school post office.

5. *Integration (Reasoning)*—Education in its truest sense enables the learner to see continuity and interrelationships among various activities.

Examples: Ability in reading is a clear demonstration of this. Letter and word readers have difficulty in interpreting sentences and paragraphs. Third-grade children in a flat, sandy country reading about cave dwellers had no conception of what a cave was until the teacher helped them to make a cave out of a few boards and a sand heap.

6. *Motor tensions in learning*—"Psycho-motor muscle tension communication is the natural language of childhood from which they are pushed by the word-centered and the book-centered cultural pattern. Obviously, we consider that the psycho-motor tensions are more important (tho less easily

⁵ Graduates of progressive high schools who had had no mathematics in the secondary school achieved records in mathematics in college superior to those of students who had had mathematics in high school. Repetition without interest does not mean learning. *Time Weekly Magazine*, No. 22, Vol. XXXVI, Nov. 21, 1940.

measured) than the spoken or written word.”⁶ This is one of the underlying principles supporting an active school program. Richest learning occurs where each form of communication, verbal and psycho-motor, acts to enhance the other.

Example: Familiar instances are the child who pulls at his mother's skirt and the adult who clarifies verbal communication by posture and gesticulation. The silent, sulky child communicates very effectively with his teacher. To the young child, motor expressions of many kinds—among them drawing and dramatization—are the natural tools of his own perception of ideas as well as a means of communication with others.

7. *Influence of the learner's experience, interests, and ability*—Tasks undertaken will have to be adapted to the abilities and interests of the learner; be within reasonable expectancy of achievement; and should increase in difficulty with the increased ability of the learner.

Example: In the seed project writing lesson previously cited, a great increase in skill came within a short space of time. The learners were ready and they had the ability. Interest and stimulation produced a high standard of achievement. Its maintenance over a period of time will depend on its usefulness in additional real situations.

8. *The educational implications derived from these principles*—Education is a process of growth. If wisdom, skill, and time permitted closer observation of children as they grow in a social environment, new phases of their development would be more understandable and predictable. The child seeks new experience and is continually increasing his own ability. Trying to teach, to add something to the child's capacity without enlisting his own effort toward the goal, is futile. Goals must be understandable to the learner, and if the individual is to increase in ability to cooperate with others, they must be goals acceptable in his social group—his family and community. Furthermore, for a majority, perhaps, goals have to be achieved as a part of a life activity. Otherwise partial skills may be acquired which do not function in life situations. So much for the principles of learning, of acquiring skills, justified by the scientific approach to educational psychology.

In the succeeding division of this chapter are given actual examples of total learning situations chosen by supervisors and teachers from several parts of the United States. Emphasis is on the development of tool subjects but unmistakably as a part of the total picture, the total life and development of the child. It is the conviction of the writer that any other approach to the tool subjects is fiddle-faddle!

⁶ Plant, J. S. *Personality and the Cultural Pattern*. New York: Commonwealth Press, 1937, p. 20.

PART II

EXAMPLES OF CHILDREN'S EXPERIENCES AND THEIR USE IN THE DEVELOPMENT OF SKILLS

The examples here quoted are not necessarily cited as models for all schools. They do represent what earnest, thoughtful supervisors and teachers have been able to achieve. As samples of individual and class relationships they reflect, perhaps, too much emphasis on the use of tool subjects and not enough on the whole life of the child. The author is to blame for this, if blame there be. The cause is the necessity to be explicit in a few words. Perhaps, also, in his own job many of the spiritual, ethical, and esthetic aspects of a culture have a language all their own.

The child learns, it has been argued in Part I, in the midst of his environment. For this reason examples have been sought from three radically different sections of the country. *In spite of the difference of background and the difference in specifics, the types of experiences capitalized by able teachers at various age levels are convincingly similar.*

Eastern Coastal Plain

(A Primary Group)⁷

Family and Community Background

Jack, Helen, and Bob, aged thirteen, ten, and six years, are farm children who live midway between New York and Philadelphia. They seldom suffer from loneliness or lack of companionship because they are drawn along with their parents into many community activities. During the week they go to entertainments—Juvenile Grange, Parent-Teacher Association, or 4-H Club meetings. Sometimes the days and nights in a single week are too short to allow sufficient leisure for either the children or their parents.

For two generations the family has made a living from the one hundred acres of fields, meadows, and woodland that make up their farm. Recently, however, there have been many changes. Concrete highways link the farm with the neighboring cities. The children often sit on the bank in front of their house and sell farm produce to travelers from all parts of the United States. The bus from a newly-completed consolidated school picks the children up at their lane. They do not even have to walk one mile to and from school. Their parents have a car, a radio, a tractor, and electric lights, but the children still have to help with the cows and chickens. Helen helps her mother with the housework. Another change is the steady influx of new neighbors. Some farms in the area have been bought by people who can hardly speak English. The adults do not mix easily but the children are all friends at school. On other farms there are often two families; the owner who commutes to his business in the nearby city, and another family which manages the farm. Many of the owner-newcomers are artists or professional workers.

Activities of the thirteen-year-old—The school curriculum profits by this busy, changing world in which the children live. Recently the County Board

⁷ Sarah Strong, county helping teacher, Ringoes, New Jersey, contributed this material.

of Agriculture decided to sponsor the preparation of a county history by a research worker. This worker visited the community and made an appeal for old letters, old documents, or any other information that could be used. Because of this appeal, the seventh- and eighth-grade pupils became interested in working on the history of their own township. They formed themselves into committees to plan activities, write reports, draw maps, collect material, find references, borrow books, interview old residents, and secure speakers. Jack brought from home an old pamphlet and a map showing the location and ownership of farms twenty-five years previous. Altho only a seventh-grader, he helped correct a soil conservation map loaned by the district. The whole study brought into focus the need for correct oral and written English and changes that have been made thru the years. Jack read widely and learned much about measurements and processes in arithmetic. The problems that grew out of the comparisons of costs and the volume of production then and now were really interesting. Finally, the class chartered a bus to take them around the township preparatory to giving a play in the firehall illustrating their past history in dialog and lantern slides.

Ten-year-old—In the fifth grade, Helen was having her own adventures, growing in the use of the tool subjects. Her class had been struggling with simple fractions in the use of weights and measures when someone suggested that they visit the local store to see how the storekeeper managed his problems. That was the beginning of an intensive study of everything in the store. They compared costs, made maps, read, traced directions and distances, collected labels, and did many other things until every product had been traced back to its source. Helen's mother saved cans, bottles, and boxes to be used for the class store, and her father loaned the class a scale so they could practice weighing out pounds and fractions of pounds. They wrote letters asking for samples, thanking people who had helped, explaining the study to visitors. They prepared booklets and read for information. The class made a complete collection of common measures. Helen's crowning triumph came when she was able to use her arithmetic to figure out the enlargement of a cookie recipe so the class could invite their parents to see the exhibit and treat them. Helen finds that she can now be trusted to help her mother with the marketing and it is fun to be able to see so much back of a mere label.

Six-year-old—Bob, aged six, has just started the adventure of learning to read. When the class was discussing pets and their care, the county librarian arrived with some beautifully colored books that had very simple stories about pets for the children to learn to read. Bob thought that his cat looked like one of the pictures so he suggested that the class all bring their pets to school and have a show. Their teacher drew a deep breath and followed up the suggestion. Consequently, on the appointed day there were big cats, little cats, many colored cats, dogs, pigs, rats, chickens, birds, and bantams. Labels giving the name of each animal were written to place on the box. Each child told about his pet and made it do a trick if possible. They drew pictures of the pets and selected books that they would like to learn to read. Finally the show was over and each animal safely returned to its home. Next, the children decided to make a book about all the animals on their farms. Bob's father had a herd of twenty cows producing milk for the New York Dairymen's League. He also had two

horses, a colt, five hundred chickens, and half a dozen pigs. Bob had seen sheep on his uncle's farm in the hills but there were none in his community. His mother raised a few turkeys in a pen, where they were never allowed to walk on the ground. A neighbor had a large flock of ducks. Bob had often "helped" with the care of the farm animals and with the grading of eggs that were to be taken to the nearby cooperative auction, but now for the first time he began to make a connection between these living things and writing, reading, and pictures in books. From that time on this smallest member of the family became a continual question mark both at home and at school as he sought to translate familiar objects into word and number symbols, and, then in turn to translate those symbols back into his everyday life.

The Plains from East of the 100th Meridian to the Rockies

*Background*⁸

Alward, Peter, and Pominee are three boys living in a rural section of the Plains area, west of the one hundredth meridian. This is a region of scant rainfall where grazing is the chief occupation of those dwelling on the land. Alward, Peter, and Pominee all ride horseback. This is fortunate, for their horses are very useful in taking them cross-country to school and in exploring the large areas of land lying between the roads. Some of the roads are not passable in the rainy weeks of early winter or in the thaws of spring. Their horses live on grass and on the feed that may be grown in the irrigated fields along the creeks, and consequently do not require as much cash outlay as is required to keep up a car.

These boys learned to ride at six and seven. At eight and nine, their present ages, they are already helping to herd cattle with their older brothers and fathers, and occasionally with sisters and mothers. Last year in the second grade these boys became very much interested in painting. They painted pictures of horses, cattle, ranch houses, corrals, windmills, water tanks, stacks of hay, and in fact of all the equipment and much of the activity that is consequent to ranching life.

Nine-year-old—A great deal of oral English developed around the pictures the children painted, which they had sought out on their return to school in September and carried along to the new teacher. As a result of this interest other children drew sketches and pictures. The most timid boy, whose English was scanty, did his best talking in English about a picture of his horse. The children talked among themselves; they explained their work to other children, to the teacher, and to visitors. To these children the making of these pictures was not entirely play; there was a certain seriousness about the activity and they showed considerable respect for their productions. The teacher observed that they exercised care to keep paint from spattering or running and in putting the pictures away. The children always knew where the pictures were kept. These pictures were also a reason for writing, for on the backs of them the children wrote their names.

⁸The description presented here did not happen consecutively in any one classroom; it is assembled from parts of a program developed in several schools in the area. It is essentially true in that all the details were carried out in one situation or another.

Since Pominee's family did not speak or write English very well, the teacher helped him to fill out a blank form from a mail order catalog for the purchase of his clothing and leather boots. He ordered a coat, overalls, underwear, and shirts. Pominee printed the names of the articles. He wanted no mistakes made with his semiannual supply of wearing apparel! The mail-order catalog was the only reading material in two-thirds of the homes in this area; there were no newspapers and very little mail was sent or received. Other children helped Pominee with his problem and discussed their own, for practically the whole class had mail-order problems. Older brothers and sisters in the school who had more skill and could work the arithmetic problems helped to finish the orders. Those who purchased from nearby towns figured out their orders as a memorandum to the storekeeper.

Alward's family butchered a cow during October. The home demonstration agent for the county had shown Alward's parents a bulletin setting forth how a farmer should cut up a beef. One part of the bulletin contained a diagram of a beef carcass with all of the parts labeled. Alward brought to school a copy of this diagram that he had sketched and labeled. He was much interested in the unusual circumstance of having liver, brains, sweetbreads, and tripe to eat. He wrote a letter to his older brother, away from home at vocational school, about what the family was eating. His grandmother had gathered wild fruits and had made a kind of plum-pudding, a description of which Alward included in his letter to his brother. Similar letters and descriptions of home events were discussed and worked out by other members of the class.

Peter described to the teacher the Fair ceremonies in which his father had had a prominent part. Peter was evidently very proud of his father's responsibility for directing part of the ceremony. He emphasized that his father was chosen because he knew how the show should be carried out and because he never gave up but stuck right to his job. Peter said he intended to have a similar job when he grew up. In order to explain the Fair better he drew plans of the grounds and put in many of the signs, such as Park Here, No Parking, Pop, and Hot Dogs. His classmates suggested some additional signs which he had forgotten, and which helped to round out a rather complete picture.

From this beginning the pupils constructed a fair of their own, for most of the families had participated in the County Fair. Horses were ridden to school for a day by those near enough to ride in; horses were borrowed by those whose homes were too distant to permit riding in. Calves and other pets were led or paraded in wagons. The catalog, the signs for the Fair, and the prize ribbons were labeled by the children. Announcers for events on the program had the stimulation of seeing the events follow their words.

The Selection and Collection of Seeds⁹

(Junior High School)

Twenty-two of the families whose thirty-four children were in the seventh grade had gardens, twelve did not. The parents of these pupils had saved and

⁹ Contributed by Ernest Watson, seventh-grade teacher, U. S. Indian Service, Pine Ridge, South Dakota. Developed in association with the Pine Ridge Curriculum Committee, Chairman, Mrs. Wm. Whirlwind Horse, Jr., at Pine Ridge.

collected a few seeds to plant in their gardens. About one-third of the seeds planted were saved from the year before. Most of the seeds were bought from the store or from seed companies. More corn seed was saved than any other kind. In proposing a survey of the garden projects of the parents it was found that every pupil except one wanted to collect and save some seeds to take home. Even those who did not have gardens wanted to take part in the project.

With a project of taking better seeds home in mind, the seventh-grade group went to the school garden and studied the different crops. They picked out the best plants from which to save seed. They collected and dried large quantities of all the different kinds of seeds found. They learned how to dry seeds and store them in a suitable place. Seeds were taken home by various students who, on their return in the fall, reported on their success with the seeds planted the previous spring. For this work had been started with some of the students during the previous year.

A variety of activities grew out of the original plan. The seventh grade fixed up a display of the various seeds they had collected. This display was put on the bulletin board. At first the printing and arrangement of the envelopes of seeds was not very neat. After the attention of the students centered on this fact, the group started to look at and study the display and finally realized the need for neater labels. The students requested that the teacher give them lessons in manuscript writing. The seed display was then taken down and done over again. The work in manuscript writing did not end there. In addition, this group arranged an exhibit of manuscript writing for the whole school to see. Pasteboard seed boxes have been made to contain the supply of seeds which each student expects to take home in the spring. Directions for planting are being neatly printed on each package.

Samples of each of these seeds are being tested for germination, a phase of the project which has given experience in science and mathematics. Reports on variations in germination have been included in the program. Percents have been figured. Students completing this work will have learned the different methods of collecting, drying, and storing seeds. They will know how to make germination tests on different seeds. They will be able to find out which seed is most suitable for conditions in the area.

In addition to these activities of garden and classroom the students have done considerable reading. First, in bulletins and seed catalogs to discover how to plant, harvest, and store seed for the next season's planting. Second, considerable reading and discussion of a geographical nature occur, in order that varieties and subspecies suitable to the area may be selected from appropriately located nurseries and seed houses. Soy beans from Tennessee will not grow in South Dakota! As a result of this discussion and research more intelligent reading of geographical material is taking place. The students have concrete and graphic examples illustrating the effects of climate, growing seasons, character of soils, marketing, purchasing, advertising, and especially the occupational limitations affected by such factors.

Thru the social, economic, and scientific ramifications of the seed-selection project a whole cross-section of regional life has increased in intelligibility. This increase in understanding has not stopped with knowledge of one region alone. The students have learned that the same factors operate in all regions altho the

specific results may vary. The students have not only acquired special skills in gardening but have grasped the more intellectual generalizations concomitant to science in agriculture.

Southwestern Section¹⁰

General Background

The southwestern section of the United States is an area of little rainfall, of great variation in altitude, of few cities. Population follows the valleys, where water is available for intensive irrigated farming. Agriculture, including stock-raising, along with irrigation, is the great industry of this region.

Three distinct populations live, work, and have their being in the Southwest: the Indian—the first farmer—who still placates the gods of rain, the semi-nomadic Navaho and the Apache, who since Spanish days have become stockmen; the Spanish-American, living much as he lived three hundred years ago, raising food for his own family on small irrigated patches of land, running a few head of stock for wool and for hides; and the so-called Anglo, scion of an industrial nation, practicing commercialized farming, growing single crops for the market, building railroads, raising up big cities, mining, living almost entirely by money economy.

In a typical irrigated valley in New Mexico, where most of the population is Spanish-American, families have lived and farmed in the same small community for several hundred years. Spanish is the language of the community (typical thruout the state). The farms are small but families increase—New Mexico is one of the few states where native-born population is increasing thru the birth rate. There is little wage work. Railroad employment which once took up the slack has with an increasing population reached the saturation point. Whole families used to migrate to other states for bean and beet picking but that, too, has largely come to an end because of the fact that other states now have their own supply of surplus labor. The rural population has, therefore, been thrown back on its own land, and the future of much of this population seems to lie in its own community, on its own land. Many of the families still live the slow leisurely life of yesterday, bartering work, bartering produce, receiving from perhaps only one crop—chili—the rare cash they ever see. An income of a few hundred dollars is a big income.

A formal course of study or books which tell of cities, transportation, and great factories, have so far failed to be of much interest to those who have never seen a building higher than two stories, or whose industries are small home industries such as weaving, milling, and canning. But the swift run-off

¹⁰ Contributed by Julia Tappan, Albuquerque, New Mexico. This material is a first step in the collecting of information as to children's backgrounds in various regions. Some of it would be significant for homes in which the English language and the culture habits of some of the neighbors are unadapted to the new locations into which they have immigrated. Immigrants to New Jersey or Massachusetts from the old countries and even those from the metropolitan Little Italy and Little Hungary, or the like, have somewhat similar problems. For lack of space the spread of these activities over a class enrolment is not indicated. The need for cribs is described, and cribs were built for practically every family by school-boy members of one school. The outcomes in the tool subjects are easy to see in all these examples.

of water in the spring which takes off a chunk of a chili field is a tragedy which touches the whole family and in which the whole community is interested. Other common experiences of the community with which every man, woman, and child is familiar are the deaths of babies from dysentery, sadly accepted with the certainty of inevitability; the milk goat going dry from lack of food, described as the will of God; and the assistance required of the entire family in drying the chili. As the case studies reveal, the culture is a culture of manners in which the nuances of behavior are more important than the disciplines of language or science.

Intermediate Group

Jose, Maria, and Pedro—Jose talks fluently on every subject, but in school is apt to try and bluff his way in reading or in writing. He is extremely polite to visitors, offers them chairs, salutes them with flowery Spanish greetings, but outside of school he likes to listen to the political discussions of the old men gathered in the sun. He likes to interpret for his grandfather who cannot speak English. He has not yet found a political and social use for the reading and writing he has in school. (There are no Spanish books in the typical samples of these communities). He wants to talk—to learn new words—for talking is the means of communication in his grandfather's group. He is devoted to his painting and drawing for he takes his pictures home and puts them on the adobe wall beside the bright religious cards which are grouped in small patches in the kitchen.

Maria, who handled the bartering and selling of the goat's milk produced by the family flock, thru her interest in pints, quarts, and gallons helped the school to a much better understanding of liquid measure. In this small Spanish community the family had been accustomed to trading a little extra goats' milk by the pitcherful, a varying measure, depending on the pitcher of the moment. Maria's interest was intense when she found that a pint, a quart, and a gallon always remained the same, and that there need be no more arguments about the quantity or price, since a quart of milk sold in this fashion was listed in the newspaper at seven cents a quart.

Pedro came from a large family where there was usually a baby, for which he as the oldest child had considerable responsibility. His response to school work was not very encouraging to the teacher, but his arithmetic, and to some extent his reading, improved after he had an opportunity to join the carpenter shop group where fathers and sons worked together. He became intensely interested in making a crib for the baby, a very small crib, carefully measured under the direction of the visiting nurse. Pedro became very much interested in what the nurse told him about the care of the baby; he read the posters on the wall of the clinic; and he became concerned with making his own pictures on baby care, and in writing stories or the directions for baby care so that the families could see them on the wall of his home.

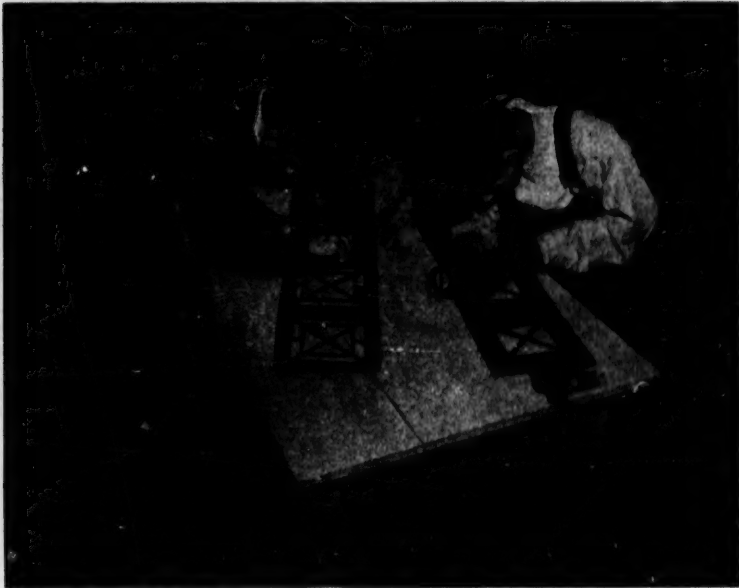
PART III

CONCLUSIONS

1. Teachers and other educationists need to understand that the scientific method rather than opinion gives greater surety. It is true that the findings of thoughtful students change as new studies contradict earlier ones. Truth remains relative to its point of departure. Certain fields, however, have been so widely explored by competent researches that the evidence is beyond any reasonable shadow of a doubt.

2. Growth is the most significant characteristic of children. Growth can be less or more, can be in wrong directions, but growth is inevitable. Stimulating and guiding growth is the teacher's job and the teacher's privilege. This factor of growth in children helps to make up for the low salaries and poor living conditions of the teacher, without excusing them. There are few rewards in life so genuine as the achievements of pupils in which the teacher, along with God, family, and community, has had at least some small part.

3. Growth in little children without textbooks, routinized classes, or courses of study—growth in and thru living—is miraculous. It must be watched with reverence and amazement!



Each Section was Measured by the Boys in Making Decoration for a Colonial Porch

[31]

4. Growth in individuals differs. Teachers and children are still made unhappy sufferers from maladjustment because of standards impossible to achieve (background, opportunity, and the individual's own purposes considered). Respect for personality and respect for varied careers in life demand differences. From the first grade on, the individual child, the group, the family, and the community should rejoice in differences, make the most of them, and foster the self-realization without which skills and information become useless baggage.

5. Each of the three communities—Atlantic Coastal Plain, Great Plains, and Southwest—from which contributions to this chapter were received, had problems of race, region, and language in the home and school. From some communities these problems will disappear faster than from others. Are we hurrying so fast to change Poles and Italians into Americans that the younger ones must leave their dances and their music behind only to find when they go higher with their education that they must spend much time in getting back what they have lost? Are Mexicans losing the Spanish nuances which might make some of their leaders capable of explaining the rest of us to our Spanish neighbors? In seeking the partial assimilation which is necessary for a cooperating democracy, is an undesirable total assimilation being sought?

6. Finally, what special needs as to teacher technics need further study?

(a) How can continuous review of pertinent studies be furnished to teachers? Particularly important are such key studies as we have in regard to the time to teach fractions, the time to introduce the alphabet, and similar questions related to the highest efficiency in education.

(b) Can teachers be trained to use simple survey technics which will enable them to know their communities, the families of the children, and some of the regional limitations influencing their lives?

If the tool subjects are to emerge as keys to the balanced and complete development of children their study need not be elaborate but must exist. Rural people are affected by:

The factors of climate; land, its use and tenure; and the quantity of water available.

Occupations; income and efficiency in use of income.

Population ratios—are there large numbers of children in relation to adults?

Solvency—is the group using its resources of social life and its resources in natural wealth in such a way as to maintain, increase, or permanently impair the yield therefrom?

If the tool subjects are to be the key to open the door to more abundant life, teachers need to discover with parents and children, and with all available guidance, the best possible answers to these problems. "Learn the key first," say some, "and then use it later." But learning does not work that way! If one learns the key but not its use, in the beginning, most of

us are condemned forever after to dangle the key without going on to unlock the vaults of useful knowledge. No! a small key to unlock a small door as we go along, and unafraid of keys or doors we can open larger doors as they are met!

(c) Scientists tell us that agricultural groups lag behind in using the knowledge available. This does not include the group that has not the knowledge; it refers to the group that knows and does not. Is it good analysis to suspect that this group learned knowledge as a thing separate and apart from action? To the degree that people, the products of the schools, in increasing numbers use the tools of knowledge, and handle their own individual and community problems; to that degree can educational programs be judged effective. *Not a higher level of literate skills alone but a higher level of literate skills along with a higher level of their use, is the need.* Education to meet such a need must have a daily program which fosters a complete, well-rounded development of children in which the tool subjects have their full part.

Chapter III

MEETING THE PROBLEMS OF FIVE-YEAR-OLD CHILDREN IN SMALL SCHOOLS

THE PROBLEM STATED

WHETHER five-year-old children should be in "school" at all is debatable, unless the school is a kindergarten, which the rural school practically never is. The fact remains, however, that in ten states the legal school age is five years, in two states it is four. Consequently large numbers of very young children are enrolled in rural schools; indeed, in small rural schools. Commonly these children are not ready for conventional second-grade work at the end of the year. That they are not expected to be ready is evidenced by the widespread practice of keeping pupils in first grade for two years, during the first of which they are called "beginners." In too many cases, however, the curriculum of the two years is the same, the children put in their first year at a hurdle beyond their powers, failing, and repeating the work next year as "first grade."

To correct this situation either school entrance must be postponed till the age at which the average child may hope to succeed with the lowest grade of the course of study, or a course of study must be provided for accepted beginners which suits their abilities and needs. This chapter is concerned with the second of these two alternatives. Its problem is the adjustments necessary in small rural schools wherever children as young as five are permitted entrance.

Since the kindergarten, which is the customary school for the five-year-old, has been developed to fit conditions quite different from those characterizing small rural schools, the five-year-old country child's curriculum may best be considered as a distinct problem, altho unquestionably it should be characterized by the general spirit and purpose of the kindergarten, and will utilize many of its materials and activities.

The two fundamental questions to answer are: (a) what are the natures and needs of five-year-old country children; and (b) how, within the conditions of the small school's organization, can these needs be served?

THE STATUS AND NEEDS OF FIVE-YEAR-OLDS

During his first five years the child's development is prodigious. He brings his muscles under such control that at five he can walk, climb, jump, balance himself on one foot, hop, skip, perhaps even dance in fair time to music. He can also use scissors and crayons; build trains, towers, houses,

and bridges with his blocks; throw a ball overhand; ride a tricycle or a sled. He is relatively independent in respect to his own personal needs of washing, dressing, undressing, lacing and tying shoes, brushing teeth, brushing and combing hair, feeding himself at table, attending to his toilet needs. He plays with companions in groups of from two to five, and with them carries on projects of building houses, stores, barns, and trains, or takes part in dramatic play representing the activities of adult life as he observes it in his environment. He likes to finish what he has started, and may carry over an enterprise during successive days. He enjoys excursions and sometimes makes collections of objects that interest him. He likes a share in the work about him, too, helping his mother with table-setting, dishwashing, sweeping, egg-gathering, or garden-making; is serious and dependable on small errands, and may even take responsible care of a younger sister or brother. He is beginning to recognize the rights of others and his own duties toward weaker or younger children or animals; practices simple courtesies and good manners; and in various ways shows a tendency to conform to the social behavior of his family and home.¹

The achievements of these five years are the outcome of almost constant motor activity during the child's waking hours. As his nerves and muscles have matured to the point at which they are ready for his use, he has thru exercising them brought them under his control and coordinated them in patterns of behavior such as he observes in the adults and older children of his immediate environment. Where that environment is deficient either in material or human facilities learnings will be inferior in kind and amount, whereas they will be enhanced by a richer range of stimulating home experience and wiser and more sympathetic guidance.

In the development of oral language the environment plays a particularly important part. Probably few teachers realize the extent of achievement in this line, under favorable conditions, during the first five years of life. Two independent investigations² have put the vocabulary of five-year-olds at about 2000 words, but variations are very great, vocabularies of normal two-year-old children having been found to range from a few words to more than 2000. Such variations are certainly in part due to native intelligence but unquestionably they also reflect differences in the opportunities and stimulations of the environment.

An almost incredible amount of talking is involved in learning to talk. A two-year-old child has been observed to utter 10,007 words in a day; a three-year-old used 11,623 words and asked 376 questions; and a four-year-old, 14,930 words, with 397 questions. No child observed was silent more

¹ Largely condensed from Gesell, Arnold. *First Five Years of Life*. New York: Harper and Brothers, 1940.

² Smith, M. E. "An Investigation of the Development of the Sentence and the Extent of the Vocabulary in Young Children." *University of Iowa Studies in Child Welfare*. 3: No. 5, 1926. Gesell, Arnold, *op. cit.*

than nineteen minutes altogether, or more than four minutes at a time.³

Children in educated homes have from eight to twelve months advantage in vocabulary development and four months in sentence structure over those in poor educational environment. Baldwin⁴ called attention to deficient opportunity for exercise of oral language in one-room schools, and deficient stimulation, such as that from books and pictures, in rural homes, as probable explanations of the slowness of response and poor scores of farm children on tests involving language. These deficiencies were observable by the age of five.

Mental development is the result of the interaction of sensory experience, motor activities, and language. Factors in the child's learning include what he sees, hears, feels, touches, smells, tastes; his manipulation, construction, and dramatic reproduction; and the flow of language with which he and others accompany all these concrete experiences, and by means of which he acquires and refines concepts and further extends his vocabulary. Especially important language factors of his development are his own questions and the answers they evoke, and his active dramatic play, with toys, with other children, with imaginary playmates, and with his elders.

By the age of five, the child's questions deal not only with *what* and *where*, but also with *why* and *how*, and lead to understandings of relationships both of likeness and of cause. The abilities to remember and to attend increase rapidly. The idea of time, tho a difficult one for the young child, begins to have meaning, at least to the extent that past and future are recognized in the ideas of yesterday and tomorrow.

Many types of number relations, tho within a narrow scope, are beginning to be grasped. The four-year-old's number concept hardly exceeds *one*, *two*, *many*.⁵ However, a group of over 1200 children between six and six and a half years old, tested during the first two weeks of school before they had been given any number work, showed number concepts which astonished the testers. Of the numbers between 5 and 10, eight was most difficult for these children, yet 78 percent succeeded at least once in three trials in correctly responding to the direction, "Give me 8 —————" (buttons or cubes or other objects). Nearly 12 percent could count by rote at least to 96 on the second trial, and less than 1 percent could not count at all. About 25 percent counted to 100 by tens. Nearly 60 percent counted objects to 20. Nearly half were able to answer correctly five out of ten such problems as, "If you have 5 oranges and get 2 oranges more, how many oranges will you have then?" and 21.8 percent gave the correct sum

³ Anderson, John E. "The Development of Spoken Language." Thirty-Eighth Yearbook, Part I, National Society for the Study of Education. Bloomington, Ill.: Public School Publishing Co., 1939, p. 213, 214.

⁴ Baldwin, Bird T., and others. *Farm Children*. New York: D. Appleton Co., 1930.

⁵ Gesell, Arnold, *op. cit.*

for the problem which proved hardest, adding 5 to 4.⁶ Somewhere between the four-year-old and the six-year-old lie the number attainments of age five, but lacking studies, we are unable to say just where.

THE SCHOOL PROGRAM FOR THE FIVE-YEAR-OLD

The duty of the school to the five-year-old, as to every other child, is to take him where he is and keep him growing along the lines of his nature and his potentialities toward adjustments and achievements desirable for him. It seems reasonable, also, to ask of the school that it further his development more than his home alone can do, else why go to the expense of providing schools at all. The first-grade teacher may conceivably hold the narrow conception of her function as the teaching of the written and printed symbols of language and number, but not so the teacher of the five-year-old, for she knows that it may be another two years before he is ready for such abstractions.⁷ Without this excuse to offer for her being, what can she do?

Several aspects of her task seem clear. First and foremost, she must strive with deep concern lest the child's development be actually retarded by his membership in the school. That this has been the outcome of school attendance in countless cases can hardly be doubted. Against the method of learning so successfully followed in the first five years of life, that of constant motor and lingual activity, are more often than not opposed the teacher's commands to "sit still" and "keep quiet." Such concrete and vital experiences of home life as pets, farm animals, the barn, plants, soil, water, toys, the pleasant business of mother busy about the house, the spicy odors of cooking, the delights of patting a bit of dough, the adventures of tree-climbing or swinging, are replaced by straight rows of more or less silent big boys and girls, little concerned with the young child. Lacking stimulation and activity, the child's mental development lags. Under repression his curiosity subsides and his interests die a-borning.

From the standpoint of physical hygiene, also, the rural school is often a menace to the child. An unpublished study⁸ in 1939 of 67 one-room schools in New York found serious defects in lighting, heating, water facilities for drinking and washing, toilet facilities, and other features. Such undesirable conditions as the following were often found:

Light indicator consistently showed one side of the room had poor light—windows on three sides and only one shade in room—room very dark, but

⁶ Buckingham, B. R. "The Number Abilities of Children When They Enter Grade One." *Twenty-Ninth Yearbook, National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Co., 1930. Chapter IV.

⁷ Gesell, Arnold. *op. cit.*

⁸ Day, Leah Almira. *A Study of the Young Child in 67 One-Teacher Schools in New York State*. Submitted in partial fulfilment of the requirements for the degree of doctor of philosophy, Syracuse University, 1939.

entire lower half of window was covered with sash curtains—curtains pulled in crooked fashion to top of windows and not touched all day—at nine o'clock the temperature was 45°; at three o'clock the thermometer registered 80°; the children left this over-heated room for a walk home on an extremely cold, far-below-zero day—two big girls brought the water in an open pail; their mittens were very soiled—pump on school grounds which were covered with flood waters—pit toilet surrounded by water was in use—water used from spring which had not been tested since the flood—toilet filled with snow above seats—in some schools there was no provision for washing the hands; in others children used the same wash water over and over. There were cases of children washing outdoors without wraps, in a temperature of 20 to 22 degrees below zero—wraps were icy when put on—children were cramped in their seats—children's toes five and six inches from the floor—desk nearly to child's chin.

It would seem that a young child's school should certainly afford him adequate space, considerable freedom to move about, comfortable seats, adequate lighting, warmth, protection from extremes of temperature, clear water to drink, a clean and comfortable toilet, facilities for hand washing, and protection from contagion. Under the conditions described above, it is difficult to see how the school could be as satisfactory a place for the physical, mental, or even the social growth of a young child as any but the most squalid and barren homes of its environment. Certainly parents in good homes would not wittingly subject their five-year-olds to such degradation.

Secondly, the teacher may seek to remedy the deficiencies in the pupils' development resulting from ignorance, want, or low standards of living in the homes from which they come. Baldwin⁹ found close similarity in the mental abilities of farm and city children during the first four years of life, but a difference in favor of city children after that period. Lacks of rural children which he particularly noted were inarticulateness along inventive and descriptive lines, poor speech habits, and limited vocabulary; and aloofness and lack of poise, manifested in either shyness or boisterousness. These deficiencies may readily be accounted for by poor home environment—parental ignorance or illiteracy; lack of books, pictures, playthings, or other stimuli; and limited social contacts. The school may go far toward correcting the resultant shortages in the child's development by supplying favorable conditions not found in the homes.

Day¹⁰ found lack of care in cleanliness characterizing the homes of the 153 children whom she studied. Thirty-seven of the children had unclean faces, 58 unclean hands, 127 untidy nails, 86 dirty necks, 70 unclean ears. Earwax was prevalent. Sixty-two children had unkempt hair, 47 a distinctly disagreeable body odor, and 50 had no handkerchief. Since five-year-old children are capable of attention to their personal toilet, the school may and

⁹ Baldwin, Bird T., and others. *op. cit.*

¹⁰ Day, Leah Almira. *op. cit.*

should undertake to develop in them habits of and desires for cleanliness which their homes have not given them.

Similarly, if because of home shortages skills and interests such as in block and ball play, in use of scissors and crayons, or in other imaginative and creative activities have not been acquired on a normal five-year-old level, or if children are listless and incurious, it is the teacher's task to afford the stimulation and opportunities they need.

In the third place, the school cannot be content with enabling its pupils to attain only the types and levels of development which they might normally be expected to bring to it. They need continuing extension of vocabulary and refinement of pronunciation, articulation, and grammatical structure. They need also more and better coordinated motor and manipulative skills, for there is reason for believing that grace and dexterity thruout life are to some extent dependent upon very early learnings. They need especially, because of the isolation of their farm homes, opportunities to work and play with groups of other children, both of their own age and of diverse ages, and to meet strangers in various situations. They may need initiation into common courtesies and good manners, and they should have continuing opportunities for exercising politeness, consideration, and cooperation.

Mentally they should day by day be extending their acquaintanceship with their world, thru excursions and observations of natural phenomena, thru conversational interchange of experiences, asking and answering questions, looking at pictures, and being read stories and verse. The concepts rooting in these experiences should be further clarified and refined thru dramatic play, drawing, painting, modeling, and other forms of creative expression. It is not enough that children be kept busy, even contentedly busy. Their activities should have content and eventuate in ideas as well as skills.

"Reading readiness," the development of which is often stated as a chief function of the beginning schoolyear, is in reality a concomitant or by-product of the total mental development envisioned, and different children achieve it at different rates. Six of the seven "essential prerequisites to reading" as stated by Gray¹¹ are aspects of mental development to be expected from the experiences already discussed in this chapter, and all of them except the sixth would continue to be desirable if there were no such things as reading and books.

These are, according to Gray¹²: (a) "wide experience," including constructive and other practical activities, excursions, social activities, and

¹¹ Gray, Wm. S. "The Nature and Organization of Basic Instruction in Reading." Thirty-Sixth Yearbook, Part I, National Society for the Study of Education, Bloomington, Ill.: Public School Publishing Company, 1937: Chapter II.

¹² *Ibid.*

games; (b) "reasonable facility in the use of ideas," opportunities for which are afforded in planning and carrying out experiences of these types; (c) "reasonable command of simple English sentences," most naturally and desirably attained thru spontaneous conversation and free discussion about experiences of interest to the children; (d) "a relatively wide speaking vocabulary," gained thru oral interchange of new experiences, and also thru hearing stories read or told and discussion by the teacher and others on matters of interest to the child; (e) "accuracy in enunciation and pronunciation," resulting partly from the child's exposure to good example, especially from his teacher if his home is deficient in these respects; and (f) "keen interest in learning to read," which almost inevitably develops in a child who is read to and sees books used for purposes desirable to him.

The seventh "prerequisite," "reasonable accuracy in visual and auditory discrimination," insofar as his incidental seeing and listening, especially his listening to poetry, has not developed it, may well be delayed as an objective to be systematically sought until the beginning of the first grade.

However, this is not to say that no five-year-old child should be allowed to begin reading. Gray points out that the time at which the child is ready for this art depends upon his mental, emotional, and physical maturity, and children mature at different rates. Many children easily learn to read at five; very gifted children learn as early as three. The five-year-old who demonstrates the qualities of readiness should be treated like any other child of like readiness.

Not only readiness for reading but also a basis of number concepts and many experiences calling for and developing facility in counting and in common number combinations are natural outcomes of such a program as is appropriate to the age of the five-year-old. So, too, are bases for further language work, such as a growing sentence sense, fluency and variety of speech, and a constantly widening and constantly refined vocabulary. Indeed, there is no area or type of learning appropriate to seek in the elementary schools which will not find its roots in such a body of experiences.

SCHOOL FACILITIES FOR FIVE-YEAR-OLDS

Small rural schools vary widely in their financial ability to afford the facilities desirable for five-year-old children, but there is not one which can justify failure to make some provision for their needs. A fundamental need is space. This is not unlikely to be found in such schools, since ordinarily they enrol relatively few pupils. Day¹³ found that 41 of the 67 one-teacher schools of her study were excellent in this respect, and that the remaining 26, tho less satisfactory, were acceptable. It often happens, how-

¹³ Day, Leah Almira. *op. cit.*

ever, that schools ample for the number of children they enrol are so filled with unused desks and seats that the space is unavailable for the child's use. Schoolboards or ingenious teachers can readily find means of correcting this condition.

A perhaps less easily corrected inadequacy is the small and neglected playground. Yet with acreage as cheap as is usually the case in regions where small rural schools abound, the necessary investment for extending the playground does not seem unreasonable to ask for, and teachers, pupils, and patrons may work together to make it desirable for the use not only of the five-year-olds but also of all the children of the school. It would seem that the space of the open country is one of the great advantages which the one-room schools should be able to offer.

"The ideal playground would be the natural playground, with wide rolling surfaces, fenceless and treefull, if we may coin a descriptive term. Up and down the grassy hill of this ideal playground children might run, roll, and slide, jumping ditches, climbing trees, digging into the earth to make caves, pools, harbors, and using nature's materials of rocks, tree leaves, branches, and uneven ground to shape their joy play projects."¹⁴

Where such an ideal is not realizable, barrels, boxes, springboards, tree horse, swing rope, sacks, hoops, tire swings, fences, and rocking chairs are all sources which will provide inexpensive means for continuing motor coordination for the growing child.

Even where a spacious playground is not available, there is seldom any difficulty in securing permission for country school children to utilize the neighboring pastures, woodlands, brooks, and roadsides for exploratory enterprises under direct teacher guidance. Moreover, the home farm commonly affords far greater potentialities for mental stimulation and enrichment of country children's experiences than are utilized by the school. These potentialities include domestic and wild plants, animals, birds, insects, soil, water, and weather phenomena closely related to the life of the child's home. By conversation and the encouragement of reports of interesting observations and happenings on the home farm and on the way to school, teachers can bring to the children's attention contacts so commonplace as to have gone unnoticed, and thus arouse and foster many fruitful interests. Animals, flowers, stones, caterpillars, and other objects of child interest can be brought to school and cared for at least for a short time. Collections can be assembled and displayed. Such readily available materials and experiences are not utilized for country children's development in anything like the degree of their potentiality.

A small amount of very simple equipment would make first-hand experiences in the great realm of science far more meaningful to children.

¹⁴ McKee, Jane W., and Gray, Lillian. "Playground Equipment." *Childhood Education*, Vol. XIII, No. 8, April 1937.

Examples of such equipment for the five-year-old's use, besides outdoor garden space, are window boxes, terrariums, aquariums, gardening tools of appropriate size, magnet, prism, magnifying glass, compass, mirror, hour glass, kitchen measuring or weighing utensils, yardstick, long tape line. Most of these are to be had at the five-and-ten, others can be made with the help of the older children, still others may be contributed by the homes. Most of them should be found in practically every small school.

Equipment for both indoor and outdoor play is also essential for the best development of the young child. Types of motor activities and their appropriate materials which have been experientially or experimentally shown to be suitable to this age are play with wheeled toys, such as wagons, kiddie cars, and tricycles; climbing and balancing on ladders, trees, fences, horizontal planks; building with blocks—large and small—with sticks, boards, or other local materials; construction and representation with sand and clay; play with dolls, toy housekeeping equipment, transportation, and animal toys; painting and drawing with crayons, soft pencils, poster paints, and finger paints on large sheets of unprinted or even printed newspaper, at tables, desks, or easels; helping with sweeping, washing and wiping dishes, table setting, caring for younger children, or other simple home tasks; and a variety of manipulative or creative activities, games, or puzzles, involving such materials or tools as scissors, hammers, saws, pegboards, large beads, stones, picture puzzles, milk bottle tops, jacks, course needles with firm but easily pierced cloth, paper and paste. Some children delight in collecting and sorting pebbles. A list of activities voluntarily undertaken in a four months period by five-year-olds in an experimental clinic included stamp books, scrapbooks, sewing, quilting, weaving, playing jacks, playing with paper dolls, building doll house furniture, building a car, building a post office, water play with boats, using colored paper for illustrative work, and water coloring.¹⁵

Not all the experiences mentioned above need to be provided in the school, for many of them may be available in the homes from which the children come. The teacher of the five-year-old must know the homes of her pupils well enough to assay their adequacy, and assure that, thru school supplementation, a wide range of rich experiencing is available to every child. Many of these facilities, however, should be found in the school even if common in the homes, in order that the children may employ them in a group of activities for the social development they make possible.

Finally, such cultural materials as books and pictures, songs and stories, which are common in good homes, have enormous stimulative and organizing value in the conceptual and vocabulary development of the young child. These are materials which, in the main, necessitate adult presenta-

¹⁵ Peterson, Theresa J. "A Preliminary Study of the Effects of Previous Nursery School Attendance Upon Five-Year-Old Children Entering Kindergarten." *Studies in Child Welfare*, Vol. XIV, New Series, No. 346, Iowa City: University of Iowa, January 1938, p. 241.

tion. The child will come in time, indeed even in his first five years, to seek them and use them in his oral language and imaginative play, but their symbols are yet beyond him. Perhaps more than any other factor, they are the cause of the superiority of intellectual status manifested by children from educated homes, and especially by children of educated mothers. It is upon the teacher that the children from less advantaged homes must depend for this highly important factor of mental development.

THE FIVE-YEAR-OLD CHILD'S SCHOOL DAY

A crucial feature of the small country school as an institution for the five-year-old's education is that the child spends in it six hours a day, including practically all the sunny hours in a winter day. Obviously this fact must be taken into account in planning the child's daily program, so as to give him opportunity for outdoor play hours in the sunshine which a good home would certainly provide. Clearly, too, since so large a proportion of the child's waking hours are the school's responsibility, it should afford practically all the types of experience he needs—motor activities, quilt play, rest, responsibility, group participation, being read to, much talking, pursuing his individual bent, observation, and listening. Nor should these be any more regimented than is unavoidable. Can such adjustments as these be made in the small rural school?

The very fact of the smallness and heterogeneity of the country school's pupil group favors the provisions which are needed. Not only is the teacher able to give greater consideration to individual pupils, but the fact that there are so few five-year-olds makes it practicable to allow them a great degree of freedom to move about and talk and play together.

There should be a place in the school which is especially the younger children's own. In a very small school perhaps children from five to seven or eight will share this, in order to afford the group contacts so lacking in the child's life in an isolated home. This place may be a corner of the room, preferably in the rear, desirably sunny, desirably with a window looking out on an interesting outdoor prospect, and as large as the area of the schoolroom makes possible. In some schools a special room or alcove is provided. The floor of this space should be clean and warm, so that the children can sit on it. A linoleum or other rug, easily cleaned, perhaps with newspaper or other insulation below, is desirable. Individual rag rugs may be woven by mothers or the school's pupils, to supplement this.

In or readily accessible to this space should be at least one low table, low chairs, perhaps a child's rocker or two, low shelves and cupboards for books, toys, and such materials and tools as the school provides for these children's use. An easel and a low blackboard are very desirable. Somewhere there should be at least one cot, couch, hammock, or even a long low table with a pad on which a tired child can rest or nap. The work-

bench for noisy construction may be here or in the school hall if the latter is warm enough.

The teacher's daily program should include periodic intervals, longer or shorter, during which she can give the five-year-olds attention, sometimes as individuals, sometimes all together, or again as members of the whole school. It is assumed that the school will be organized in not more than three or four groups. With the youngest of these the five-year-olds should come together for practically all their activities other than those necessitating systematic use of the symbols of reading and numbers. Usually they will be equal participants, but occasionally they will be mainly listeners, or play a minor role. The five-year-old children may also share to some extent the experiences of the older groups, perhaps listening to their singing, watching their science work, or just standing near a big boy or girl who is drawing, modeling, or doing something else of interest to the little child. Older children, perhaps as young as first grade or as old as eighth, may find motive for and needed exercise in reading aloud to small groups of the little folks. An older boy or girl may take care of them in outdoor play, or have charge of the supply cupboard or book shelves which house the five-year-old's materials. A work period for the whole school will give opportunity for the noisy types of construction which must have a place but cannot practicably be carried on in the room when for other purposes reasonable quiet is necessary. During this hour youngest and oldest as well may receive from the teacher the individual attention they need. Finally, there should be some time, if only five or ten minutes in each quarter of the day, which the teacher especially devotes to the needs of the five-year-olds. It is highly desirable, also, that her daily plans include definite consideration of what all the hours of that day, and all the activities of older and younger children it includes, may be made to contribute to the youngest. Such planning, using all the resources possible even in disadvantaged schools, may well result in opportunities well worth very young children's leaving their homes to get.

Chapter IV

READING IN THE SMALL SCHOOL

THE GROUP OF educators who are interested in early childhood education have written much and thought more about the part that reading plays in the life of children. It is recognized that reading is but one means of learning and should be evaluated in its relation to other ways of gaining worthwhile experiences. Dr. I. Keith Tyler, at a conference on reading held at the University of Chicago last summer, pointed out that schools had overemphasized reading to the neglect of other forms of learning.

"Out of school, new means of mass communication have shifted the learning habits of the whole population. Those who read with difficulty are enabled to learn thru other media; those who read will utilize these other forms of communication but not to the same extent. Reading is the most difficult and the most abstract of the various means of learning, but it is also of greatest value. Within the school, then, variety in the use of direct participation, excursions, sound and silent films, radio programs, slides and pictures, diagrams and maps, and reading is most effective in achieving important educational objectives. Since reading depends almost entirely upon the background acquired thru these various learning aids, it is clear that the acquiring of reading skill is furthered by a diverse use of all of them rather than by a preoccupation with reading alone."¹

The newer emphasis in reading is upon its being a needed tool rather than an end in itself.

Reading readiness—Reading is a difficult skill to acquire because it demands the formation of many new muscular and mental habits. Unless these habits are correctly formed, reading is too difficult and too tedious and soon becomes an undesired activity. Very young children, before they are ready for school, see in the fascinating world around them, conduct of adults being influenced by what must seem to them odd and curious signs. The family automobile stops at certain intersections where there are yellow-colored boards with black markings. Some children may be interested enough to ask the familiar, "What does it say?" or thru repeated experiences may learn for themselves the word "stop." Again, above a favorite place for buying ice-cream cones, is a bright neon sign. Repeated seeing of this sign and hearing the adults say "Sweet Shop" gives a meaning to these certain lights. Thus, in countless ways, children help to prepare themselves for the great adventure of "learning to read."

¹ Gray, William S., compiler and editor. "Reading and Pupil Development." Supplementary Educational Monographs, No. 51. Chicago: University of Chicago, October 1940. p. 156.

For many years, teachers have been earnestly striving to utilize the interest and curiosity with which children come to school in building a readiness for reading. Reading readiness usually refers to that stage of physical, mental, and emotional maturation which a child has attained when he is ready to undertake beginning reading.

In any discussion of reading readiness, the physical condition of children is important. Young children are normally far sighted and lack the high degree of precision needed to insure muscular coordination of the eyes. Sometimes the only thing needed to overcome this difficulty is time. In some instances, however, it is necessary to consult an oculist to secure proper eye adjustment. The general health of a child is a significant factor in readiness for reading. Low vitality hampers concentration, causing habits of inattention. Often, because of a slight deafness due to colds, a child gets inaccurate sound pictures of words and a confusion in meaning results.

There are, of course, children who have little interest and curiosity in the area of reading. About this group we have learned much in recent years, due to the careful, intelligent work of psychiatrists, psychologists, and educators. To force reading instruction with such children retards rather than hastens it.

Emotional and mental adjustments for children entering school are difficult to make and the school is not justified in giving the child of



Children Help Each Other in Learning to Read

mental immaturity a task so strenuous that it brings failure and thus breaks down his self-confidence and builds up an attitude of dislike for all school activities and reading in particular. Psychologists tell us that if children are conscious of improvement their efforts are stimulated thru the satisfaction derived from success.

Dolch,² in a book on psychology and teaching of reading, shows that more deficiency in reading can be traced to "discouragement thru failure" and "consequent attitude of antagonism toward reading" than to any other cause. Every year there are found children who do not read because their incapacities in that direction have been stressed and commented upon by parents and teachers. If a child in early first grade makes little progress in reading because of a lack of readiness, parents and teachers sometimes begin to worry that the child may be unable to read and this fear is communicated to the child. Learning is slowed down because this fear attitude makes the child conscious of his inadequacy. Nothing is more unfortunate than to hamper a young child's *desire* to read, for one of the major objectives of reading instruction is to develop a permanent interest in reading.

All teachers of young children are interested in providing a program out of which a happy and successful beginning in reading may develop. The first important task of a teacher is to provide an environment in which children feel secure and in which the materials are such as will arouse curiosity and interest. A child's oral vocabulary increases rapidly when he is surrounded by a stimulating environment and is able to secure patient answering of his many questions. Normal children talk. Parents and teachers utilize this urge to talk and develop oral language so that it will make a ready medium for the acquisition and expression of ideas. The child's world is a world of seeing, speaking, and hearing. One of the prerequisites to reading is a rich oral vocabulary, fortified with a fund of meanings.

"Word meanings are the 'sine qua non' of reading. They are the raw materials not only of reading but also of thinking. If anyone wishes to estimate the absolute necessity of meanings, he should try reading in a foreign language in which he is sufficiently proficient to know only one-half to two-thirds of the words."³ In recent years teachers have come to realize that it is desirable to prepare children for reading by providing experiences which will awaken in them a wish to put some meaning into and get some meaning out of pictures and words and which will arouse in them a desire to read before any definite instruction in reading is given. Meanings, which are built up and become attached to the spoken word

² Dolch, Edward William. *The Psychology and Teaching of Reading*. Boston: Ginn and Co., 1931. p. 341.

³ Cole, Lucila. *Psychology of the Elementary School Subjects*. New York: Farrar and Rinehart, 1934. p. 47.

because of the broadening of the child's interest and the sharpening of his understanding of the life about him thru books, will be recalled in the new situation of reading. Surround children with attractive books and be enthusiastic about books yourself. The love for reading and the love of books are the two most important objectives to be accomplished in the elementary school.

Early reading activities—There is a tendency to use the experiences of the children in the group as a basis for beginning reading. Such material has interest and meaning for the children and they are more ready to think and read about something in which they have already participated. They associate the visual symbol with concepts already existing in their minds and immediately have a feeling of satisfaction and success in their ability to read. Consciousness of success aids learning and stimulates effort. Children soon develop a desire to record and share their experiences. They form the habit of expecting meaning from all printed material, as has been indicated, and develop the ability to recognize printed symbols which express their ideas. Reading immediately becomes functional in character for it is made a necessary part of the day's activities.

The children may be interested in planning what they wish to do in school, and so, following a group discussion, we have a list that the teacher records on the board that says:

We want to paint.
We want to read.
We want to sing.
We want to play.

The list may be a long or a short one depending on the imagination of the children or on stimulation on the part of the teacher. Again, it may be of interest to know what time the bus arrives and departs, and so the teacher writes on the board, "We go home at 3 o'clock." Children often know how to print their names on entering school and so they like to sign their names under a sentence that says, "I must bring a smock." Children who do not know their names often regard a small piece of cardboard on which an older child obligingly prints their name as a great treasure. The next day the heading may be "I brought a smock" and again appropriate names are signed. Children often like to find how the second message is different from the first.

A bulletin board, devoted to the younger children in the rural school, might announce that "Mary has a birthday. She is six years old," or "Our cat has three kittens. One is white, one is gray, one is dark gray," or "Sheila brought Anne to school. Anne is a big doll." Perhaps there are only one or two easels in the room, so an older child may print, "I want to paint a picture." Again names are signed and "turns" taken. The picture when finished is a valued possession, and its value may be enhanced

if a title is printed under it. "The Sea Gull" and "Come, Kitty, Kitty" are expressions of mood, feelings, and ideas. An exhibition of these artistic efforts hung about level with the child's eyes may lead to a catalog, with names of pictures typed or printed. Because the name of the picture and artist is recognized only by its author and because the exhibit may contain a half dozen pictures, it in no way deters interest in the project.

Treasures from the outside world arrive, such as chestnuts, acorns, bird nests, gaily colored leaves, milk weed pods, thistles, and a science table is set up. Labels are printed, and as the materials are often familiar, six-year-old children match treasure and label, after being helped by the teacher or older child a few times.

When beloved pets are brought to school, stories concerning them are dictated to the teacher, who obligingly prints on the blackboard or on large pieces of unprinted newspaper. So it is no uncommon occurrence on entering a schoolroom to be greeted by a dog, who wags his tail in friendly fashion, and to glance at a blackboard that says:

Rags

Mary Jane brought Rags to school.
Rags likes school.
Come again, Rags.

Mary Jane may remember "Sheila brought Anne to school," and if the chart is still hanging in the classroom may be interested to go over to it and make comparisons. Perhaps the teacher writes the words for comparison even pointing out the similarities. It is important that these records are satisfactorily recognized, as good teachers do not let their pupils fail in this initial period.

Other charts may contain accounts of home happenings.

My Colt

I have a colt.
My colt drinks milk.
My colt drinks water.

Things I Can Do (for girls)

I wash dishes.
I set the table.
I take care of the baby.
I feed the chickens.

Things I Can Do (for boys)

I carry the wood.
I feed the cow.
I pump water.
I hunt the eggs.

Because of the interest of the school in the packing and transportation of the autumn fruits and vegetables, a trip may be planned to a nearby railroad station to watch the loading of the freight cars. The trip is planned, not entirely by the teacher, but with the cooperation of the children, who compose a letter to the station master, which may be written by an older child asking permission to visit him. Younger and older children help with the plans, making lists of the children who are to go in each car or making rules that must be in force if the trip is to be successful. Here is an opportunity to formulate and record such arrangements so that each child may know just what is expected of him. An older child writes these rules on the blackboard or on large pieces of heavy paper. It is interesting to watch children go to the chart in their leisure time and repeat what the older children have told them has been printed. It is memory work, surely, but it is developing a favorable attitude in the written word. Older children may be of great assistance in recording and are usually eager to be of such service.

After the trip is only a memory, there may be much discussion of what the children saw and experienced. Perhaps the great engine with its throaty roar captured their imagination, and again the teacher suggests that she will write their story if they would like to compose one. Many educators are stressing the value of children composing their own stories.

It is equally important that a child be able to carry a sequence of ideas or events in mind and retell them in the order of their happening. Teachers encourage children to feel cooperative responsibility for telling interesting happenings and commend each attempt as a contribution to the experiences of the group.

This is a fine attitude to establish toward reading because as Miss Rhoda Harris says: "Children still have spontaneous natural ways of expressing their feelings, their purposes, and their ideas. They have their individual rhythm and tempos of language. It too often happens that at the time when skill subjects begin to be taught children lose their individual, natural ways of expressing themselves and take on a very usual pattern."⁴

It is essential in this period of preparation for reading that emphasis also be given to correct pronunciation and enunciation of words. Teachers should at all times speak clearly and with definiteness, for children learn thru imitation.

Miss Harris cites an instance of the use one teacher made of child interest in an engine. The teacher said, "If I were a big black engine." Instantly a child responded, "I'd have a big black body," and a second child

⁴ New York State Education Department. *Curriculum Guides for Teachers of Six, Seven, and Eight Year Old Children*. p. 124.

said, "With a bell on top," and a third child added, "And a smoke-stack smoking." A lull followed this so the teacher repeated, "If I were a big black engine," and called upon another child. The following story was written by the group in this way. In the final writing the teacher omitted repetitions; otherwise it was unchanged.

If I Were a Big Black Engine

If I were a big black engine
I'd have a big black boiler
With a bell on top
And with a smokestack smoking.

If I were a big black engine
I'd have a big black cabin
With a fireman to fix the fire
And an engineer to drive the train.

If I were a big black engine
I'd have a big light
I'd be pulling a coal car full of coal
I'd go right under a dark tunnel.

If I were a big black engine
I'd pull passenger cars
I'd pull sleeping cars
I'd pull dining cars
I'd pull freight cars that carried iron
To the factory.

If I were a big black engine
I'd have a big black boiler
With a bell on top
And with a smokestack smoking.

This is largely an informational story, but it is written in the form of six-year-olds' engine knowledge. Young children identify themselves with their interest so easily that one can often use means of helping them to express themselves with clearness and vividness.⁵

A group of first-grade children, interested in the falling leaves, composed the following lines with very little teacher guidance.

Falling Leaves

Autumn is here
Winter is coming
See the pretty leaves
Some are golden

Some are red
And some are brown.
Softly, softly they fall
Down to the ground.

⁵ *Ibid.*, p. 126-27.

Resourceful teachers will have no difficulty utilizing all sorts of experiences, individual and group, about which interesting records may be made. It is understood that in this so called "experience reading" effort is made to control the vocabulary, but not to the extent that is accomplished in the pre-primers.

The newer textbooks in reading are based largely upon children's common experiences, so it is possible to use them very early in a child's reading experiences and supplement them by the children's own compositions. No longer is it necessary that every child should know every word on every chart, but he will begin to get valuable "readiness" habits, such as seeing that stories read from left to right and from top to bottom.

The program as carried out in the modern elementary school means a variety of books. No longer is one-reading text considered stimulating enough for our modern children, surrounded as they are by all sorts of varied influences. Much easy material is advised and at least three book companies have recently published sets of books containing three pre-primers. These readers possess many assets, not possible in the experience reading. The pictures are delightful. The children in these books live normal, happy lives in pleasant homes; possess playmates; go to interesting places; and many times they have delightful pets. Plot and suspense are introduced, as is shown, for example, when Mac breaks loose from his kennel and dashes gaily down the street to catch the family car while it is waiting at a red light. Have the children in the car seen him? You will not know until the page is turned.

In these books the vocabulary is carefully controlled. One manual says, "Great care has been exercised in the selection of the vocabulary at each level, in the rate at which new words are introduced, in the way they are distributed in content, and the frequency with which they are repeated, to insure maximum learning rate and a minimum of vocabulary difficulties. Altho the vocabulary load is low, it is sufficient for the child's rapid assimilation of new meanings and varied concepts."⁶

If we define reading as interpretation of thought, meaning must receive major attention and children must be taught to ask and answer definite questions, to discuss, to compare experiences, to think things thru, to form judgments, and to make applications to their own personal living. Teachers begin the reading program with easy, interesting material, having real content value so the percent of success will be high. Young children should be kept from all feeling of failure and inadequacy because of an inability to negotiate the difficult skill of learning to read.

Word study and drill—It is essential that children have methods by which they can identify words. Versatility of word attack should be encouraged and specific technics built up. New words may be introduced thru discussion and identified in content. Meaning is the first essential

⁶ Winston, John E. *Easy Growth in Reading Pre-primer Manual*, p. 7.

because reading is an interpretive process. Picture clues are used from the beginning and are continued thru all reading experience because much understanding is gained from pictures.

Lucille Harrison in her book on reading readiness says that meaningful concepts not only aid in the interpretation of symbols but also aid in fixing the memory of printed symbols so that recognition is made easier whenever the word is seen again. Practice on words should always emphasize the thought side. "What does this say?" rather than "What is this word?"

Teachers should have children make a comparison of new words with familiar words or use word helpers such as "and" in the word "sand," "over" in the word "clover," "ate" in the word "late."

Be consistent in having children look all the way thru a word from left to right and note significant details. When a child has developed the ability to observe quickly and accurately the general configuration of a word, to see some of the characteristic details, and at the same time to use any available context clues, he will seldom need to make a complete analysis of many words. Often a glance at the initial consonant may give the needed clue. There is a growing tendency toward a postponement of the teaching of phonetics until children are able to recognize a considerable number of words by the above methods and then teaching only such sounds as are of immediate use in the child's reading. Teachers should study the wordlists in the books the children are reading and teach those phonetic elements occurring most frequently. A phonetic rule is profitable only when it is a generalization from many cases.

All phonic systems advocate ear training as an approach to words. Teachers help to develop in children a sensitivity to auditory and visual likenesses and differences in letters and letter combinations. This is done as opportunities arise in connection with daily reading activities. There is no basis for the claim that the use of phonic analysis or any other method of word recognition interferes with reading. If children are able to go on with their reading they will not stop for any kind of word analysis. If they are unable to recognize a word they must necessarily find out what it is before they go on. Always avoid having children separate phonetic elements from the words in which they are found. When a sound is not recognized, a familiar word should be supplied from which the sound may be obtained. Blending of sounds is accomplished mentally, not vocally.

A fundamental condition for developing skill in word recognition is repetition in different settings and distribution of drill at intervals. With much reuse of words at varying intervals permanent recognition is secured. This is an argument for a great variety of reading material of the same level of ability, for the oftener a child meets a word in a new situation the better learned it is. Comprehension is limited by the extent of a person's vocabulary, so in order to have children get the greatest value from reading teachers must help them to extend and refine their vocabularies. If

children do not have methods by which they can recognize words they compensate for this inadequacy by guessing. When meaning is emphasized and drill is given in context rather than in isolated wordlists, the study of words becomes an interesting activity for children. A child enjoys making a word and picture dictionary, and at the same time is getting helpful practice in word study. Card games in which words are matched with pictures are valuable as drill. It is usually more beneficial to drill upon words in their contextual setting, but frequently a word needs to be taken from the text so that children can be more attentive to certain characteristic details. In all drill the emphasis is on individual difficulties. Children's time is wasted when working on so-called group difficulties.

Newer emphasis in reading—Interpretation with understanding is a requisite of good readers. A fund of knowledge is open to individuals who can read well. Teachers have to spend too much time explaining what is in textbooks. The reason is that children have not the fundamental reading habits and the store of concepts essential to thorough understanding. Teachers are becoming aware of the fact that meaning must receive more attention. McKee says, "Printed symbols do not give meaning to the reader, they merely stimulate him to recall familiar concepts. The reader utilizing these concepts achieves meaning."⁷ The reading process has not reached completion until what is read has worked its way back into the experience of the reader—until he has applied the result of his reading to thought and action.

School activities can be carried out only through extensive and intensive reading. With an increase in variety of activities comes a greater need for specific reading abilities. Many of the newer books are organized around topics which form the basis of the elementary-school curriculum, such as sources of food, clothing, shelter, communication, transportation, division of labor, mutual interdependence, and social problems. Miscellaneous books, newspapers, and magazines are drawn upon as sections of their content best serve the interests and activities of the group or the individual reader. Children must have the ability to read with some definite purpose in mind. They must locate information, select important ideas, organize, make use of brief notes or outlines, evaluate, and reread for details. Reading progress should be evaluated by the gain in ideas and the ability to use the ideas rather than by the number of pages over which the eye has traveled. Children must be given opportunity to discuss and associate with their own experiences what is read, to communicate their experiences to others, and to form their own judgments. This type of reading takes time but material full of value should not be read too rapidly. Such material may not necessarily be more difficult if some preliminary preparation is made and unusual words are given some study.

⁷ McKee, Paul. *Reading and Literature in the Elementary School*. Cambridge, Mass.: Riverside Press, 1934.

With this new emphasis upon functional reading, care must be taken to give children an awareness of books as sources of pleasure as well as of information. Children like stories which stimulate the imagination, which are full of surprise, quick movement, repetition, and humor. They should do some reading just for fun. A reading table generates pleasant associations with books and may be a very great factor in holding children's interest in reading. Each child should have the privilege of using a table where attractive, well-illustrated books, suitable to his level of desirable habits, abilities, and attitudes, will help lead to wider interests and a wider growth in knowledge.

Teachers must feel the necessity of sharing books with the children and should become effective oral readers. Children can enjoy and appreciate much that is beyond their ability to read. Verse-speaking choirs aid in literary appreciation and speech improvement. There is a tendency to give children more practice in oral English, so in addition to silent reading and word study a parallel program of oral reading should be given. Much of the oral reading should be given in audience situations. An interesting investigation, reported by L. C. Gilbert in the *Elementary School Journal* of April 1940, condemns the practice of having all follow in books while one child is reading orally. More fixations, more regressions, and longer pauses are made by good readers when following along with one not so good. Oral reading takes place in a natural situation if the reader is interpreting to the others material which he has prepared and with which they are unfamiliar. As children advance from grade to grade the subjectmatter contains more and more unfamiliar concepts. Thus at all grade levels a continuous program of readiness for the thinking side of reading is necessary. A wide vocabulary to which definite meanings are attached becomes more and more essential and concepts must be accurate and vivid. Teachers on all grade levels and in all subjectmatter fields should be teachers of reading if reading is to function in the enriched curriculum of our present schools.

Emphasis is being given to preventive programs rather than to remedial measures in reading. More careful consideration is being given to a planned reading program and there is more flexible grouping of children according to their interests and needs. The modification of teaching technics grows out of a changed point of view as the value of each new procedure is made evident. An exceedingly important factor in the teaching of reading is the meeting of individual differences. Modern reading programs, therefore, are greatly concerned with the meeting of these differences. A first step to accomplish this aim may be thru informal tests, which often indicate children whose needs are similar. Then follows the desirability of grouping these children according to their needs. Rural schools have of necessity recognized the worth of the small group with similar needs for instructional purposes, but the urban schools have been slow in utilizing this

technic. However, as its worth has become apparent, teachers of both rural and urban schools are using it with increasing success.

Durrell, in his *Improvement of Basic Reading Abilities*, makes an excellent analysis of the fundamental problems concerned with this technic and offers many valuable suggestions for its use.

"Grouping should be flexible. Six groups may be suitable one day, three the next, and perhaps only one the third day, depending upon the nature of the assignment for the group.

"Small-group work should begin gradually. Confusion will result if an entire class is suddenly divided into small groups. On the first day, six or eight good readers should be allowed to work together with a pupil in charge. Usually bright pupils have the greatest ability in self-direction. The work will appear attractive to the slower readers if the faster ones do it first. Small-group work thus appears as a reward for good achievement. After the class has become used to one group teaching itself, another may be started. When the novelty of two or three groups has worn off still others may be formed. Sometimes the second group may consist of the poorest readers. Thus their difficulties are not overemphasized, since they are not the last ones chosen for small-group instruction.

"Each group should be in charge of a pupil who ordinarily is a member of the group. The pupil-teacher must learn how to work with his group. Almost every child has taught in a play school at home. Each child, of course, has watched the teacher's methods. But the pupil-teacher needs some private instruction in handling the day's lesson.

"If carefully directed in group instruction, the superior pupil obtains desirable personal development. He grows in sympathy, leadership, understanding of others' difficulties, oral expression, patience, and additional mastery of the material. This growth in social habits will offset loss of time otherwise devoted to independent learning.

"Small-group work demands care in planning the assignments. If the teacher does not have time to plan small-group work, this method should not be used."⁸

Out of recitation period—As the teacher works intensively with individuals or small groups of children there will be considerable time when certain of the groups will need to work by themselves. Flexible, careful planning is needed to make these periods of real value. Appropriate materials and careful guidance promote opportunities for the children to choose and judge, to assume responsibility, and to promote initiative. In rural schools, these periods are less difficult to plan as older children are usually able and willing to assist in the pleasantly educative activities planned for the younger children.

⁸ Durrell, Donald D. *Improvement of Basic Reading Abilities*. Yonkers-on-Hudson, N. Y.: World Book Co., 1940. p. 69.

During these periods older children may read to their young friends. Books are often obtained from state-sponsored traveling libraries. Occasionally a daily newspaper carries an interesting children's story. Also there are excellent ten-cent books available. Often, children are glad to bring a favorite book from home to be read to the group.

Teachers often plan the work for these "out of recitation periods" as an outgrowth of what has happened in the recitation period. Thus if children have been reading about Spot and Puff, they may be interested in picturing some of the scenes about which they have read or in imagining some new situations for these popular pets. Older children help by printing the names given to these artistic efforts.

The making of scrapbooks is another favorite activity. Often children classify their pictures and will have perhaps a "dog" book, which may contain pictures which they cut from magazines or make themselves, of favorite breeds. Occasionally they like to have information printed in their books, such as "Be sure that your dog has a drink of water," or "Your dog needs little starch." Sometimes several children like to work together on one book; or again they like to make classbooks, which record pictorially interesting school events, such as excursions, assemblies, or some phase of a much liked social studies unit.

Children may have projects of their own on which they are glad to work during these times. Thus the making and dressing of dolls is often an absorbing activity for some of the little girls. Pin cushions, beanbags, scarfs are only a few of the articles which children suggest that they would like to make. Gifts for Christmas or for the birthdays of family or friends may be made in these periods under the tutelage of the older children.

Puzzles of all sorts are interesting. Often these are made by the teacher or her willing aides. Commercial puzzles range from complicated, expensive ones to simple, cheap ones.

Commercial workbooks have their place in these periods. They present much interesting material, and have excellent technics and carefully worded directions which can be read to the younger children. They are designed so that children may work at their own rate of speed. Persistently constant checking is essential, as is also correction by the children themselves.

Resourceful teachers evolve countless ways of making the "out of recitation period" valuable. Great skill is needed to foster and encourage good independent work habits, so that gradually there may be a withdrawal of help from the teacher or older children.

As has been constantly stressed, the reading program of any school will reflect the philosophy of the teacher. Reading should become one of life's enduring pleasures and satisfactions and to the teacher of the rural school this is a constant challenge.

Chapter V

THE LANGUAGE ARTS IN THE SMALL SCHOOL

IF THE SOCIAL studies can be considered the "heart" of the curriculum of the modern school, the language arts must constitute its "nervous system." Thru their agency, knowledge is taken in thru the sensory receptors, assimilated into new habits and attitudes, and expressed in the varied forms of speech and writing.

In the "three R's" of the early American school the language arts were represented by reading and writing. In the more complex program of the later school they were listed more specifically as English, composition, rhetoric, grammar, reading, literature, phonics, penmanship, and spelling. On the whole these subjects placed their emphasis upon the mechanical aspects of language.

The school of today approaches the language subjects from a functional point of view and expresses them as interrelated activities of everyday living: *listening* experiences, *speaking* experiences, *reading* experiences, *writing* experiences.

Thinking thus in terms of situations in which the child *uses* language in relation to *all the activities* of the classroom and of life outside it, it is obvious that these experiences cannot be compressed into the narrow limits of the textbook-recitation technic, and that the teacher in the modern school must be aware of, and able to employ, a wide scope of materials and technics in providing these experiences for his pupils.

LANGUAGE OPPORTUNITIES IN THE RURAL HOME AND SCHOOL

The objectives of education in any field in the rural school do not differ from those in all elementary schools in our democratic society. The growth and development of the child as a contributing member of that society, and as an individual possessing self-confidence and self-direction are equally important. The rural community offers certain important advantages in developing these traits to the teacher who can recognize and utilize them.

The farm family is a closer social unit than the city family. Neighbors are farther away and the early life of the child is largely confined to the borders of his own farm. There is intimate association not only with the mother and her duties but also with the varied types of work carried on by the father, and with the life cycles of the farm animals. The child participates actively and responsibly in the tasks of the home. Often he has calves, lambs, or chickens of his own, is responsible for their care, and has the training and satisfaction of marketing their produce. He develops at an

early age a consciousness of the relation existing between work, responsibility, intelligent problem-solving, and the desirable things of life.

The rural community is a simpler unit than the city community and the rural child has a more personal relationship to it than is possible for the city child. He may know personally the members of the schoolboard, the town selectmen, the officers of the farmers' clubs and cooperatives, the county agricultural agent, the forest ranger. Because the whole family must go, or none, a large proportion of the children of a rural district attend meetings of the parent-teacher association, of farmers' clubs, of church societies, even the annual schoolmeeting. Here the child gains an understanding of community issues thru listening to adult discussions—assessing of the school budget, raising of church funds, planning of cooperative activities, problems of marketing and buying, the exchange of work, the protection of life and property, and the innumerable interrelations characteristic of even the smallest community.

In recreational activities, too, rural children participate as recognized and respected factors. School programs and parties and Sunday School entertainments usually command the largest attendance of any of the community gatherings. Here the children are the entertainers, the parents largely spectators. Children join in the social hour following community meetings on the same basis as adults. Because of this similarity of interests and because of the close-knit fabric of relationships in the narrow compass of the small community the child experiences in many ways a richer and more humanized life than that of his urban cousin.

A fourth advantage of the rural child is his endless opportunity for contact with the absorbing life of the out of doors. Children are naturally alert to things going on about them and curious about them; they ask questions, challenge statements, wish to find out for themselves. With their constant exposure to nature knowledge in the lives of the farm animals and the seasonal life of birds and wild animals, rural children can attain, with intelligent guidance in the school, one of the most desirable objectives of modern education, the scientific attitude—the habit of observing accurately, of compiling evidence and drawing tentative conclusions from it, of checking these conclusions with new evidence, of checking with experts when possible, finally of applying the knowledge gained to new situations.

To the rural teacher who is alive to these vital experience backgrounds of her pupils, the language arts program in the school offers almost a bewildering opportunity for their utilization. In its very composition the rural school has inherently an ideal situation for socialized activity. The long unbroken day with its companionable lunch hour gives opportunity for easy give-and-take in friendly conversation. When only two or three children represent a grade, combinations of grades for language activities

become desirable and varying age levels and interest groups can be brought together. Cooperative units of work centered about community and nature interests can develop naturally and will provide rich opportunity for finding and organizing information and imparting it to others or storing it away for future use. The small group working on a common project offers the retiring child opportunity for initiative and self-expression; it brings the dominant personality into a realization of the necessity for allowing others an opportunity to participate. Language becomes a valued tool for the accomplishment of group objectives.

Let us analyze these opportunities offered by the home and community and guided by the school in their relation to the four types of language experience listed in the first section:

I. Speaking Opportunities

A. In home and community

1. Conversation
2. Discussing
3. Planning
4. Telephoning
5. Shopping
6. Telling stories
7. Taking part in a program
or entertainment
8. Participating in Sunday
School
9. Reading aloud
10. Social customs
 - a. Introductions
 - b. Courtesy habits
11. Health problems

B. In the school

1. Conversation
2. Discussing
3. Planning
4. Telling stories
5. Reporting
6. Participating in conferences
or interviews
7. Dramatization
8. Asking questions
9. Answering questions
10. Presiding at a meeting
11. Taking part in a program
or entertainment
12. Reading aloud
13. Participating in a club
meeting
14. Social customs
 - a. Introductions
 - b. Courtesy habits
15. Health problems
16. Choral reading

II. Listening Opportunities

A. In home and community

1. Radio programs
2. Adult discussions
3. Public meetings
4. Sound pictures
5. Church and Sunday school
6. Conversation
7. Stories and anecdotes

B. In the school

1. Radio programs
2. Classmates' reports
3. Teacher's talks
4. Club meetings
5. Programs
6. Audience reading
7. Conversation

III. Reading Opportunities

- A. In home and community
 - 1. Recreational reading
 - 2. Newspapers and magazines
 - 3. Advertisements
 - 4. Notices and signs
 - 5. Letters
 - 6. Recipes and directions
 - 7. Informational reading

- B. In the school
 - 1. Literature
 - 2. Study reading
 - 3. References
 - 4. Newspapers and magazines
 - 5. Free recreational reading
 - 6. Bulletin boards, signs, notices
 - 7. Directions

IV. Writing Opportunities

- A. In home and community
 - 1. Friendly letters
 - 2. Business letters, orders, etc.
 - a. For self
 - b. For parents
 - 3. 4-H Club reports
 - 4. Copying recipes, etc.
 - 5. Filling out blank forms
 - 6. Memoranda, records, diaries

- B. In the school
 - 1. Friendly letters
 - 2. Business letters
 - 3. Reports
 - 4. Summaries
 - 5. Answers to questions
 - 6. Copying
 - 7. Making bibliographies, indexes, tables of contents
 - 8. Labels, titles, signs
 - 9. Memoranda, records, diaries, notices
 - 10. Creative expression
 - a. Prose
 - b. Poetry

A study of the out-of-school uses of language by high-school pupils in Chicago gives an index to the proportion of each of these types of activity in daily life in home and community.¹ "Percent of possible score" was listed by these pupils as follows:

Speaking	59
Reading	54
Listening	46
Writing	37

THE PLACE OF THE LANGUAGE ARTS IN INTEGRATED UNITS

The use of units of work centered about a common interest of one grade, or of several, is becoming an established practice in the small rural school. This practice is based upon the fundamental principle that the child acts and learns, not as a series of compartmentalized factors, but as a unified organism. Physically, mentally, and emotionally he reacts to environmental stimuli.

¹ Starbird, Myrtle; Williams, Ralph; and Hatfield, W. W. "Out-of-School Uses of English." *The English Journal* 22:467; June 1933. High-school edition.

The term integration is commonly used to express the combination of school activities into related wholes. In the most complete work on the subject available, L. T. Hopkins² defines integration as the *continuous, intelligent, interactive adjusting* of the individual *with his environment*. If the interrelation of school activities is to be truly intelligent and interactive it must depend upon language as the solvent which makes it so, and it must bring into these activities the whole environment of the child. The rural school is peculiarly well fitted to achieve these objectives in various types of units.

Units utilizing community life—No educational leader or statesman can predict, in the present economic and social uncertainty, what kind of community any schoolchild of today will experience as an adult. But we can help today's pupil to orient himself in the community of which he is now a part, to recognize its resources and its needs, to learn something of how its present situation developed, to advance tentative suggestions for its betterment, and to participate actively in bringing some of these suggestions to realization. Such a program will involve a wide variety of activities which will be knit into a comprehensive whole thru the language arts.

In a small community in northern Minnesota a group of children began the study of their own community thru tracing the successive ownership of one tract of land. Their activities involved excursions, interviews, study of historical documents, reference reading, letter writing, picture taking, drawing, and construction. They culminated in a written history of the community, illustrated with drawings, maps, diagrams, and kodak pictures, and in a program in which the children related and dramatized the community's history for an adult audience. Thruout the unit, listening, speaking, reading, and writing experiences enriched and integrated the factual knowledge which was being gained.

In a rural community in Maryland the small farmers supplemented their income by cutting and hauling timber to a local sawmill. From immediate observation of this work a rural school's unit widened into a survey of the transportation of the lumber to various industrial points, into a canvass of other lumber regions of the United States, into a study of the trees suitable for commercial purposes, into research into nationwide forest conservation, and finally back into the needs and provisions for forest conservation in their own community.

A chart of "Community Resources for Learning" is given in a bulletin of the Pennsylvania Department of Public Instruction.³ It includes the following blocks of material which may serve as sources for such units: homes in the community, the school, community organizations, agencies for health and welfare, means of communication, government, professional

² Hopkins, L. T. *Integration*, New York: D. Appleton-Century Co., 1937. p. 315.

³ Pennsylvania Department of Public Instruction, *Special Opportunities of Small Rural Schools*, Bulletin 20, Harrisburg, Pa.: the Department, 1939. p. 70-71.

services and others, the cultural heritage, sources of historical knowledge, nature, natural resources, farms in the community, farm service occupations. Each of these topics may form the basis of a valuable unit which will develop the child's ability to observe and analyze his environment, to draw conclusions as to its needs, and to direct his own activities toward constructive participation in community growth. Each unit will give varied needs for the use of language in purposeful, self-initiated activities.

Units utilizing nature—Many rural people live out their lives in constant association with nature, yet with lack of intelligent appreciation of its beauty and complexity. With thoughtful guidance and stimulation from the school, rural children can develop that scientific curiosity which contributes to intellectual life and to the full realization of their heritage of rich leisure-time resources in nature.

Often this valuable resource is ignored by the teacher because she lacks technical knowledge in natural science. If she is sincerely eager to increase her understanding of nature, however, she can learn much from her pupils' observations, and can clarify and enrich their knowledge by studying hand in hand with them.

The study of nature lends itself effectively to *perpendicular units* in which all grades work together. The language activities which grow out of excursions and individual reading and observation will be at the level of the *individual child's* ability, and *group* discussions and criticism will contribute to the growth of all.

A typical unit recently seen was the stocking and observation of an aquarium. An excursion to a pond for animals accustomed to unacrated water was made. The older boys with wading boots and dip nets scooped up animals, vegetation, and ooze. The younger children sorted and prepared the plants and animals for transportation to the school. Neither teacher nor pupils could identify many of the plants, larvae, and animals, and books and encyclopedias were collected and pored over as the developing life was observed from week to week. Intent reading, letters to libraries and to the science department of a near-by college, records and reports of observations, and poems and stories at all grade levels grew out of the project.

Units centered about health—In spite of the apparent advantages of a rural community for healthful living, research has revealed that rural children compare unfavorably with urban children in nutrition and health standards. The rural teacher who is eager to serve his community can do much to alleviate unhealthful practices thru well-planned units based on the study of community health problems. Encouragement of proper balance of fruits and vegetables in the diet, of correct sleeping habits, and of cleanliness can be given tactfully but effectively in classroom reading and discussion.

Subjectmatter units—The day of restriction to a single text in geography

and social studies is no more. Wide reading in many texts, exploration of reference books, use of the radio and visual materials, with class periods devoted to reports and discussion give new scope to the contributions of the language arts in these subjects.

Culminating activities—The most common culmination of a unit of work is a program given for parents or for another group of children. Such a program consists predominantly of the language outcomes of the unit—summaries, reports, dramatizations, discussions, oral reading, marionette and puppet plays, pantomimes, individual reading or speaking of poems, and choral reading.

While an audience situation provides excellent motivation for good standards of performance in these, care must be exercised to insure that the language activity is an integral outgrowth of the unit, not a mere artificiality produced for the "show." Growth in the pupils and interest and intelligent attention in the audience are most genuine when the culminating activity is a true climax of sustained, purposeful learning. A fine series of programs exemplifying this principle is reported in *Creative Ways for Children's Programs*⁴ by Josephine Murray and Effie Bathurst.

LANGUAGE ARTS IN THE DAILY PROGRAM

In the daily schedule of the traditional rural school ten minutes of English were allotted to each grade. The short period was given over almost wholly to the mechanics of grammar and usage. It is a step forward to combine two or three grades for the English period, but the longer time thus gained has little purpose if it is spent in isolated drill. Language is intrinsically a means of expression, and unless pupils have a real need for the expression it becomes an empty form, devoid of immediate or ultimate value. The day's program should be so arranged that the language activities can be incorporated into, and stem out from, the unit or units being carried on.

The following sequence and time allotments are merely suggestive and should be rearranged as the needs of individual schools require:

Before school and until 9:45

Work Period

As pupils come in they may get out materials and go on with cooperative art, construction, reading, or writing activities which have carried over from the previous day. The teacher is free to go from group to group or to give individual help.

9:45—10:00

Organization Period

Art and construction materials are cleared up, routine announcements made, and pupils prepare for the rest of the morning. Health inspection may occur at this time, if desired.

⁴ Murray, Josephine, and Bathurst, Effie. *Creative Ways for Children's Programs*. New York: Silver, Burdett and Co., 1938.

Each group working on a unit meets in the circle with the teacher for evaluation and discussion, for reporting, assignments, and general planning of study, composition, and construction activities. After the group meeting pupils work individually at seats, with reference reading, maps, texts, and other study materials.

Grades I and II have basic reading followed by related seatwork. Grades III thru VIII carry on speaking, listening, and writing activities related to the unit. Groups may meet in the circle with the teacher or she may circulate from one individual to another, giving help, making notes as to skill needs, and observing work habits.

If a perpendicular unit in nature study or health is being carried on, parallel to one or more social studies units, this period may be used with the whole school once or twice a week for discussion, reporting, assignments, and general planning in that unit.

Speaking and listening activities of a recreational nature should accompany lunch. Free conversation, telling of anecdotes and stories, riddle guessing, and oral games or contests make for informality and provide opportunity for unself-conscious oral language. Attention should be given to eating habits and social courtesies.

These may take the form of literature, poetry, art, or music. The library-reading club may have its meeting once a week. Creative activities should be a natural outgrowth of appreciational work and may be guided and evaluated in this period, but continued individually in free time.

Grades I and II work separately; grades III and IV, and V and VI, may be combined if individual reading abilities warrant. This period should be devoted to increasing both oral and silent reading skills.

Grades I and II:

Vocabulary drill, phonics, penmanship, basic number activities

Grades III thru VI:

Spelling, dictionary, language skills, penmanship, oral group work, and individual written work in arithmetic

Grades VII and VIII:

Spelling, functional grammar, penmanship, oral group work, and individual written work in arithmetic.

This block is placed at the end of the day so that the drill may be directed at the points of need observed during the day's language activities. It is definitely teacher-directed and should consist of a series of short intensive drill activities with groups and with individuals. Lower-grade children may be excused at the close of their work. The teacher should be free toward the end of the period to give individual supervision in the written arithmetic.

3:45—4:00

General Science (Grades VII-VIII)

Since in most states a definite science course is outlined for these grades a separate period is assigned. If a perpendicular nature unit dovetails with this science course the period may be moved forward to a more convenient time for lower grade participation.

THE DEVELOPMENT OF SPECIFIC SKILLS

Listening skills—With the dominance of radio in our daily lives the ability to listen analytically and intelligently is becoming constantly a more vital need of the American people. The unit type of procedure can contribute much to such listening skills. Cooperative research for the answers to questions and problems develops critical listening to reports. Accuracy, specificity, and intelligibility are seen to be necessities. The habit of suspending judgment until evidence is available is established. Evaluation of the manner in which oral work is given leads to the establishment of speech standards. Contrasting and analyzing radio talks develops critical evaluation of speech quality and of informational accuracy.

Appreciation lessons in literature, poetry, and music, make their contribution to critical listening skill. Enjoyment of materials within his understanding and suited to his interests, well read by a teacher with sincere appreciation of them, will form a foundation for the individual's future selection of reading materials and radio programs.

A certain amount of testing upon materials listened to has its value if the materials are informational in quality. Such testing, however, may be disastrous to an appreciational enjoyment of literature.

Speaking skills—Few teachers have sufficient training in speech to undertake a highly-developed program of speech correction. But it is within the power of every teacher to provide children with an informal atmosphere in which speaking is free and unself-conscious, a variety of resources and opportunities for speaking activities, and a good model of enunciation, tone-quality, and correct structure in her own speech.

Oral composition ability grows out of freedom and out of purposeful situations for its use. The average school supplies too little of either. Allowing children to talk, in an informal group, about their activities both in school and outside, will give them opportunity to learn to talk in turn and

to express themselves clearly and interestingly. Cooperative activities around centers of interest really absorbing to pupils will provide the essential "something to talk about" without which audience speaking is impossible. Excursions, construction and art projects, and a stimulating schoolroom will give resourcefulness and confidence to oral language experiences.

Constant vigilance and tactful unobtrusive correction of usage errors as they occur is the most valuable and effective technic for correcting habitual errors. Research has shown that formal grammar and isolated drill have relatively little transfer to daily speech. Understanding of the need for new patterns of expression, concentration on a few forms at a time with constant patient correction of lapses by the teacher, offer sound means of establishing basic speech habits.

Vital situations which really affect the school, such as playground problems, safety needs, club organizations, and participation in community activities, offer free discussion opportunities. Presiding at a club meeting, announcing a program, or arranging with the forest ranger for a talk on fire-prevention will help the child toward self-confidence and mastery of speaking technics.

Choral speaking is an activity especially well adapted to the rural school with its wide range of voice qualities. Children love the rhythm of poetry and will participate more freely in reading it in a group than individually. Clear enunciation, correct breathing, good voice placement, and appreciative interpretation can be developed thru this medium.

Reading skills—Reading in the modern school has come to be more a functional skill than a formal exercise. It is integrated with the whole curriculum and more varied and flexible technics are used in its teaching. There is greater stimulation of reading interests thru activity units and it is more individualized in its materials, goals, and standards.

The reading program as part of the language arts program has three aspects: (a) the development of skill in specific reading technics; (b) the use of these skills in finding and contributing desired materials in associated subjects; and (c) the appreciation of high quality literature.

Systematic training in reading skills is carried on in the basic reading program. In the first grade, introduction to formal reading is preceded by a variable period given over to the development of "reading readiness." The child develops basic language skills and understandings and acquires a desire to read before he begins the actual interpretation of printed symbols into words. As his reading horizon widens he reads—in a wide variety of books dealing with child life—stories, fantasy, and informational material. Gradually he is guided into reading with a definite, specific purpose; into finding the main thought of a paragraph; organizing ideas; selecting desired information; and summarizing it into presentable form.

These skills, while developed by the basic program, are greatly furthered by purposeful reading in connection with units in other fields. Ability to

use tables of contents and indexes, to "skim" in locating information, to analyze and evaluate its suitability for his purpose, become habitual parts of the child's reading equipment.

A well-graduated introduction to phonics is presented, after a nucleus of sight-words is thoroly established, as a tool which will help him to "unlock" new words met in his widening scope of reading materials. In the fourth grade he begins to become familiar with the dictionary, and with guided practice it becomes a useful aid in the pronunciation and interpretation of new vocabulary.

Reading for appreciation can be made desirable by exposure to good material at the child's interest and reading levels, by group enjoyment fostered by the teacher's own sincere enthusiasm, and by sharing a paragraph, a poem, or a story thru oral reading to an audience.

Oral reading skill grows in proportion to the child's felt purpose in the reading. If all members of the audience have the same material before them, if they listen only to detect his errors, if no comment or appreciation is expressed at the close of his reading, little progress can be expected. But if he is reading a selection for which he has real enthusiasm, if he has had an opportunity to prepare it so that he can read smoothly and with expressive interpretation, and if he is assured that his audience is eager to hear his contribution, oral reading can give satisfaction to both reader and audience. Standards can be developed by teacher and pupil comments and by periodic discussions centered about such questions as, "Why did we enjoy Paul's story?" "How can we help Sally to make everyone listen more closely?"

Writing skills—Writing is essentially a means of communication and it can be mastered only thru experience in normal, purposeful communicating. Written composition should grow out of a need or a desire for imparting or recording some material which has value and interest to the writer. Such composition may be "purposeful" or informational in character or it may be "creative," with connotations of emotional expression in its production.

The purposeful or utilitarian type of communication is often difficult to secure in its true sense in the schoolroom. Artificial occasions are set up or written compositions are demanded without any motivation, with indifferent results.

Wise utilization of wholesome activities where the child uses language naturally and spontaneously and in which it serves a vital purpose must form the basis of composition activities. Excursions, experiments carried out, meetings attended, radio programs heard, art and construction projects, will give sources for letters, records, and reports. Composing such work as a group rather than individually, at first, will free children from feelings of inadequacy and give social values to the task.

The teacher's part in either group or individual composition is much the same. She must first help the pupils realize a present, desirable need for communication. As they attempt to meet the problem she must be available for advice and assistance when sought, and help children to select technics which are suitable. She must then help them to evaluate their work in terms of its effect upon its audience and to determine the factors contributing to success or failure. She must help them to recognize specific skills in which they need aid as a group and provide practice in a separate drill period. Lastly, she must help them to note their own growth by comparison of their present products with those of past lessons. Class and individual record books and diaries developed in former units should be preserved for use as measuring sticks.

Correct usage, types of sentences, grammatical forms, and other writing technics should receive drill as they are needed. Language texts and work-books provide good drill exercises but should be used selectively as teaching tools, not followed slavishly in sequence.

Good standards of penmanship and spelling should be required in all written work. Pupils should be allowed to make rough copies as they are composing reports, stories, or letters, but pride should be developed in writing, as final products, neat legible papers without misspelled words or language errors.

Too great emphasis on penmanship as an isolated drill has little educational value. Five minutes' intensive drill a day upon specific errors of form noted in the written composition of other periods is more practical. Practice time should be devoted to correct forms of letters and words, not to meaningless "nonsense" exercises.

The question as to whether manuscript writing should be taught in first and second grades is not a crucial one. Scientific evidence has produced no marked proof that it is superior. If the teacher herself can write well and uniformly in the manuscript style it is probably preferable for the first two grades. Pupils with immature muscle coordination write separate letters with less strain than connected ones. There is probably more transfer from the manuscript form to the printed form, in reading. It is more rapid for the younger child than cursive writing, but the cursive form is more rapid for older children. The change from manuscript to cursive form should, probably be made in third grade.

Spelling has been the subject of exhaustive investigation over a period of years. In general, the conclusions reached are that there should be a direct attack rather than an incidental procedure. This means that it should be taught as a specific subject, that definite lists of scientifically selected words should be used at each grade level, and that a definite time for drill and practice should be set aside for it in the day's schedule.

No especial merit has been proven for the study-test as against the test-

study-test method. Either may be used effectively if certain principles are adhered to. The number of words to be taught in any given lesson should not be large, and the daily period need not consume more than fifteen minutes for each group, providing for both study and testing. Pupils should know the pronunciation and meanings of the words selected, and strong emphasis upon visual imagery should be made when presenting a word. A preliminary test saves the pupil's time as he studies only words in which he has had a real difficulty. This difficulty should be located and he should be helped to an effective method of learning how to correct it. Pronouncing the word, copying it carefully, spelling it several times—first looking at it, then with eyes closed—writing without looking at the copy, then checking the result carefully, comprise an effective method of study.

Review of words missed in former lessons should be given at gradually lengthening intervals. Most modern texts provide for such reviews in a general way, but individual errors should be recorded and rechecked at intervals by the pupil and the teacher.

New words met in writing experiences related to units should be copied by the child from the book or from a list of "New Words We Have Learned" exposed to view on wall or board. They should *not* be made the basis of 100 percent accuracy requirements in spelling lessons, especially for slow and average pupils. The lists in accepted modern spelling lists represent the words most commonly needed in children's and adults' writing, and comprise a sufficient burden of memorization for the child of average ability. Superior children will often learn to spell numbers of additional words thru mere incidental contact with them.

Creative writing—Creative writing differs from the other forms of written expression in that it represents the individual's own personal reaction to the situation or experiences about which he writes. It is thus original and distinctly his own.

The encouragement of creative writing in the school can accomplish several purposes. It gives the child an opportunity to express thoughts and feelings which he might not express orally. It provides a means of expression for children who have potential talent, and gives them encouragement and directed instruction. It arouses and sustains sensitiveness to and appreciation for similar work created by others. It stimulates improvement and enrichment of language skill more completely and effectively than do the conventional group procedures. Finally it encourages intellectual adventurousness and gives the individual a rich resource for personal satisfaction and enjoyment.

Creative writing cannot be forced. It must be nurtured by a congenial atmosphere of experiences and activities which provide encouragement for the child's expression of his own ideas. Flexibility of time schedule, rich reading opportunities, respect for and appreciation of good quality in

literature and poetry, interest and sympathy on the part of teacher and companions will all act as stimuli.

Growth in creative writing, once a beginning is made, must depend upon the insight, enthusiasm, and discrimination of the teacher. She must have an appreciation of beauty, patience, sympathy with childish fumbings, and tact in leading, directing, and improving them. She must have a sufficiently rich background to enable her to sense the true and valuable kernel in budding efforts and help it to develop into its ultimate power.

LANGUAGE IN A DEVELOPING SOCIETY

The function of education in any type of society is the preparation of the young for useful participation in that society's activities. Our society is one of rapid change and development, industrially, socially, and economically. Useful participation in its varied activities implies flexibility, adjustability, poise, and self-direction.

No aspect of educational attack today is more potent in its preparation for such participation than that which prepares individuals to listen with discrimination, to read with intelligence, and to speak and write with self-confidence and effectiveness.

Chapter VI

THE DEVELOPMENT OF UNDERSTANDING AND SKILL IN NUMBERS

THE ELEMENTARY rural teacher of from one to eight grades seeks a balanced curriculum altho faced with needs and demands in many subjectmatter fields. "Rithmetic" may receive too little attention or too much, or the emphasis may be misplaced.

Mathematics is especially likely to be pushed into the background by the "progressive" teacher who reasons that time spent in preparation in the fields of social studies, science, English, dramatics, radio, music, or reading will do more to socialize the children or will make up for more serious lacks in their environment or education. This teacher chooses to use her time to what she believes is the best advantage while trusting arithmetic preparation to writers of textbooks, workbooks, and commercial tests.

An inadequately trained teacher is more likely to fall into the opposite habit of giving too much emphasis, or at least too much time, to arithmetic and especially to its drill aspects. She finds that plenty of interesting number seatwork helps keep little children out of mischief. Most children derive a certain satisfaction from working quantities of easy "type" examples such as workbooks and textbooks provide. Moreover, parents are not prone to criticize a school in which children acquire such tangible skills as ability to add and multiply with speed and accuracy.

There is historical precedent for this attitude. Number work has been given a very prominent place in the daily schedule of the American school for many years. It was probably introduced some little time after reading, since especial emphasis was early put on reading as an aid to religious training. No doubt its introduction was due to the fact that it had practical value in helping those early people take care of their own business affairs and was worthwhile for them, as it is for us today.

Even tho a definite practical value was recognized in the introduction of number work, the time came when that side was forgotten. Schoolmasters who may have believed in teaching the subject because it was needed drifted into the habit of using a very formal teaching process in which they came to "set sums" and required work without bothering about its value to their pupils—in all probability because that was the easier way. There were those, too, who believed and contended that arithmetic should be taught only to train the mind and who bent their entire effort toward this end. But whether the aim was mental discipline or practical arithmetic fallen into a formal drill teaching, the result came to be the same.

The results are the same today, also, in the alarmingly large number of schools which fall into the traditional group and in the so-called progressive schools whose teachers have fallen into the way of too much meaningless formal drill or have never been entirely converted to belief in newer arithmetic methods.

The rural teacher who would have his pupils develop both understanding and skill in numbers may feel that he is faced with an impossible dilemma. There are four horns to the dilemma: (a) orientation or the development of arithmetic readiness and vocabulary; (b) selection of situations in which arithmetic appears as a vehicle necessary to efficient living; (c) gradation; and (d) drill. Let him grasp these four horns firmly, for it is with the teacher that the responsibility for accomplishing desirable results in arithmetic rests. His classroom and his procedures as well as his pupils reflect the philosophy which is his. If he is observant, up-to-date, and interested in the needs of the pupils, he will succeed.

Let us consider the horn of orientation first. No one would think of teaching beginning reading today without first developing reading readiness. Dr. Leo J. Brueckner makes a similar case for arithmetic readiness.¹ For instance, many children can count and are anxious to commence formal arithmetic when they first start school. But Superintendent Harris Crandall of Saratoga Springs stresses the important fact that this ability is not really counting but merely repeating a series of number names. A variety of number experiences must be provided before the child has adequate concepts of number meanings, size, and number relationships. The following anecdote well illustrates the difficulty attendant upon developing concepts of number processes. Five-year-old Alenda had saved every cent given her for almost a year in order to be able to buy Christmas presents for the entire family. She had counted her money many times. She happily selected the gifts and carefully counted out the money for the clerk as each item was crossed off her list. When 27¢ of her 33¢ had been spent she noticed the six pennies remaining in her hand from her year's savings and burst into tears as she said to her mother, "They are going to be all gone!" Her introduction to the subtraction process had been too abrupt.

Following progressive courses of study, many excellent books of number stories, primary arithmetics, and manuals have been conceived with the aim of guiding the teacher in giving the child a thoro orientation in primary number concepts, number relationships, and vocabulary. Of course no two beginners will have exactly the same degree of readiness. Children who have been to kindergarten or who have a large box of blocks at home should have more developed concepts of quantity, size, and shape than those who have neither. Those who go downtown often have more ex-

¹ Brueckner, Leo J. "The Development of Readiness Tests in Arithmetic." *Journal of Educational Research*, September 1940, p. 15-20.

periences with such things as prices, making change, paying fares, measuring distances by blocks, and noticing sizes of clothes and shoes. Farm children are more likely to have some vague understanding of distance in miles, dry measure, the harvesting of fruits and vegetables, uses of utensils of different sizes, weight, age differences, and counting of such things as eggs and chickens. Those who have an allowance and even a childish budget or a savings account will be more value-conscious than others whose wants are all foreseen or who secure money by begging. Therefore much of the number work of the first three grades in the rural school will consist not of unplanned "incidental" contacts but of carefully arranged experiences designed to develop the many facets of arithmetic readiness and number-consciousness. The first two or three grades in the one-teacher school may well be combined and handled as a single group in order to provide both time and a social situation in which to develop readiness.

Another problem which often confronts the rural teacher in first grade is the case of the precocious child who comes to school with a high degree of number readiness and is eager to learn to count to one hundred, write numbers, and learn the addition combinations right away. Perhaps this situation would not have arisen if it had been foreseen by the child study group of the parent teacher association, but the knowledge comes too late to do any good in this instance. There is probably more harm in disappointing the child and losing the support of his parents by withholding what he expects than there would be in letting him come to class with the next older group and learning it.

The importance of the readiness factor does not diminish above the third grade. It is of equal importance in introducing any new work. There is seldom, if ever, any need for remedial teaching except where this factor has been slighted. Even in seventh grade the remedial arithmetic specialist starts by determining the child's readiness status and then goes back as far as may be necessary to build up his experiences before prescribing any drill. The rural teacher who has the aid of no such specialist also needs to be careful about the readiness factor when asking a child, in addition to working with his own group, to come to class for a time with a lower group which may be about to study certain work in which he is weak.

The second horn of the dilemma is the selection of situations in which arithmetic appears as a vehicle necessary to efficient living. The rural teacher can find time to grasp this horn if he will do a little combining of classes and alternating of work. This is now suggested by so many state courses of study that it need not be discussed in detail here. It is heartening today, after the introduction of various theories of number teaching and the various attempts to justify these over a long period of years, to see evidence of a definite trend back toward the use of numbers as a tool to help in carrying on the simple business situations of the average individual. All living involves numbers. Children grow up with them. They hear

discussions in the home circle of buying groceries, paying bills, and so forth. They often have a small part in the actual buying, and so it is safe to believe that any actual problem from real life will be sure to catch and hold their interest and to result in learning.

The selection of situations in which arithmetic appears is thought by some to be the function of the course of study and by others to be a responsibility of the teacher. We hold that it is both. The course of study includes and suggests; the teacher selects and adapts in the light of the child's living. Many teachers overlook significant number situations in school or neglect them because they have not been trained to see and appreciate the relationships that exist or because they have a definite feeling that only the formal aspect of arithmetic is important and that it is purely a drill subject. This is due partly to the fact that they learned number work themselves as a thing set apart, just as a form to be known in case it was needed later. Sadly enough, when the need for the process arose it had often been forgotten and relearning was necessary.

There are many teachers, even today, who have not come to think of the classroom as a place where children and teacher live and work together in the true sense of the word. They are holding on to the old, formal idea that the classroom is a recitation room and they conscientiously teach counting, for instance, in a formal way while overlooking real counting situations that are present. Why should any teacher count out sheets of paper or keep the store accounts when children may learn by doing these things in actual relation to usage? Why should any teacher do the measuring in her classroom when a pupil may do it just as well with a little supervision? There are also teachers who, because of their strict formality in teaching, have yet to set up situations in which number needs arise. There are no activities in their classrooms and no resulting opportunities to see number situations and use them. Such classrooms exist to a greater extent than many realize, even in this day when so much is being done to give the child his deserved chance. This condition is due more to prejudice against something new than to ignorance.

Irrespective of what may be in the course of study, the major responsibility here is the teacher's. It may be well to consider the different kinds of number work first, and in the light of our consideration determine the actual needs of the pupils in the community. When this is done it is time to set up a plan or means for fulfilling these needs. Plans or courses of study would rightly vary with localities, but further examination would show a considerable number of similarities.

One of the first questions the teacher in the field would ask after thoughtfully considering this view might be, "What can I do about it when my course is already set?" Indeed it is a thought-provoking question, for courses of study are to a certain degree binding and limiting. Yet regardless of what is set up by the system or county or state, whatever

is not based on child needs and interests is a blockade to learning and therefore to successful teaching as well. The teacher may have very little to do with the actual making of an arithmetic course but if he is a resourceful person and knows children, he will be able to alter to a degree the course as outlined. He should be able, by showing some initiative and feeling some responsibility for the task that is his, to inject enough of his own philosophy into his teaching to tie what is attempted to real child interest—otherwise his place is not in the schoolroom.

If the popular modern viewpoint that the child and his interests and needs should be considered first is accepted, then the teacher will necessarily have something to do with the course of study, whether he realizes it or not. And he will limit the work of the year to what can be done successfully, knowing that to attempt too much will result in a sense of failure and a feeling of confusion in the end. Since no teacher who does not actually feel a vital interest in his pupils as individuals will attempt to put their choices first and think with them as they attack a piece of work which is and should be of vital importance to them, and since no teacher who lacks a deep understanding of children will make attempts to help them as individuals, such efforts set teachers up as "good teachers," whether in a small rural community or elsewhere.

Distrust of his own skill should not deter the teacher. Most teachers have a certain understanding of children. Indeed, they know more about the natures, the needs, and the behavior of the children with whom they deal than they frequently realize. Those who have made a study of child psychology and mental hygiene have already begun to equip themselves for the large job of teaching children numbers thru the evaluation of theory, the careful guidance of pupils, and thru association with meaningful experiences and activities. Such teachers will realize that regardless of the course of study they have a definite part. Unless the child has been reached, no actual teaching has been done.

Thus the teacher's first effort in the development of understanding and skill in numbers is to ascertain the child's real need and begin there. This may be done by using the arithmetic which naturally grows out of a unit of work in which the child has a definite interest, by utilizing number situations which involve the community in which the child lives, by making the most of number possibilities in small everyday situations, and even by games and imaginary situations similar to those in which the child has a part.

A practical illustration of the place of arithmetic is found in a unit on foods. In studying food or in the preparation of a hot lunch a class needs to make certain definite purchases before a dish can be prepared. Recipes must be enlarged so that all may be served. The use of numbers is practiced in determining the amount needed, in its purchase, in the following of the enlarged recipe, and in the final serving. An understanding of pints, quarts,

and gallons follows the actual cooking in the classroom. An understanding of pecks and bushels results from the study of grains. Interest in fruits is sure to bring knowledge of dozens. If vegetables for the hot lunch are to be raised in the school garden or brought from home, or if the child has a 4-H Club garden project, bills, accounts, profit and loss, and so forth, will be involved. Later, in selling lunches there is much dealing with numbers in keeping accounts and figuring profits. A group studying foods may also need oilcloth to cover the breakfast-room table. They measure the table, then take a trip to the store to buy the needed material. It is found to cost so much per yard and the cost of the needed amount is figured. The children pay the clerk from the school's, the club's, or the teacher's money, and change is made. If white rats are used for a diet experiment cages must be made, food bought, and weights recorded. This gives practice in such things as measurement and making graphs. Subtraction is involved in order to find the number of grams gained or lost by each rat each week. The term "net weight" is used. Calories and vitamins take on quantitative meaning. The clock is used to time the cooking of fresh vegetables. The thermometer is used for temperatures.

The newspaper phase of a community unit also offers excellent opportunity for the development of understanding and skill in numbers. Hectograph pans, filler, ink, pens, and paper are bought to meet the problem of "printing." A group may go to the supply house and open an account in the name of the "business manager." Records of expenditures and moneys received must be kept, bills paid, and new supplies ordered. The cost of the newspaper is figured and profit or loss determined. Later, when the hectograph method may have proved inadequate, the problem of buying stencils, hiring them cut, and having the copies run off on the Mimeograph provides further opportunity to develop understanding and skill.

Still another unit which offers a chance for rich and meaningful number experiences is the clothing unit. A group studying cotton may go into a field and pick at one cent or even one-half cent a pound. Each child picks as many pounds as possible. This is weighed separately and the total number of pounds found. The money earned by the group may be spent for material for aprons, doll clothes, or materials for weaving. Later, the products made may be sold in the class "clothing store" at a profit. Weaving is especially rich in number possibilities.

A Christmas unit might include buying and making costumes; measuring paper for the scenery; buying wood, cloth, oilcloth, gilt, or enamel for use in making Christmas presents for parents; buying the Christmas tree, lights, and ornaments; ordering candy from the wholesale house and boxing it by weight; enlarging patterns or sketches; collecting and repainting old toys for the hospital or children's home; or filling a Christmas basket for the needy.

A second-grade group or even an entire school interested in the circus



Going to the Big Show

may make use of numerous number situations. The making of clown suits would call for the measuring of material and the purchase of the needed yardage at a given price. The use of yards and feet would enter here as it would into the building of the tent. In discussing how much money pupils have to spend they practice the 5's. They count out the ticket money in half dollars and dollars. If the group attends two circus performances comparisons such as the number of elephants or camels may be made. Further practice with numbers may be involved in arranging for transportation to the circus grounds. If six cars come to take the children and only three are needed, three go home. If twenty-one children visit the grounds in the morning but eight cannot stay to see the afternoon performance, there are only thirteen left to stay during the afternoon. The purchase of six red balloons and four white ones offers opportunity for addition. How many balloons in all?

These number situations arising out of units are not problems but means toward a satisfying end.

While numerous number situations may arise in some units, there are other units which are of interest to the child yet are not rich in number work, for it is a generally accepted fact that number work ties up less with

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units than do reading, language, and the social studies. Since this is true, it is well for teachers to remember that number work dragged into a unit is useless. It is far better in such a case to accept the fact that real number interests are not present and look elsewhere for them.

No enriched teaching can be separate and apart from the community. In the more progressive set-up the group may lay out and map a nature trail, survey a proposed centralization and figure pupil-miles of transportation to each of several sites under consideration, or plan a camping trip to the mountains. A group planning a trip to the mountains, for instance, immediately feels the need of funds. They find out the amount necessary for train or bus fare, camp fees, and groceries, and set to work to earn it by giving a play. They open an account at the bank, make purchases, study timetables, and make reservations. Other situations may call for reading thermometers, automobile speedometers, gas and water meters, and road maps. They even study census figures.

The modern classroom is a set-up which itself involves a variety of learning situations dealing with numbers. That a group lives together is indication that such situations will arise. There are possessions which belong to the group and there are those which are the property of individual pupils or the teacher. All of these must be counted and cared for and may easily come to involve the pupils in the more complex problems of cost, loss, and upkeep, as time goes on and the process becomes more involved. The counting of paint boxes, boxes of crayons, and pairs of scissors; figuring the cost of such necessities; collecting milk or lunch money and paying bills; keeping attendance records; collecting pennies and keeping the class bank; keeping a record of the cost of glue, paper towels, and paper napkins purchased for the room and reimbursing the teacher or school for these are but a few of the possibilities to be discovered in small everyday situations.

If neither the large center of interest represented by the unit going on at the moment, nor a community situation, nor an everyday life situation is usable or desirable at a certain time, the thinking teacher may turn to imaginary situations as a means of arousing interest. These should not be overdrawn situations but instances which could well happen within the pupil's experience. In the same connection, interest may be gained thru real or imaginary games. Use of these should be part of a good teacher's stock in trade. But it is natural that the more pupils know about the activities or objects with which they are dealing, the greater their value.

Now that we have firm hold of the first two horns of the dilemma, let us fearlessly grasp the third—gradation! This problem is usually met by the course of study, it is true. Still many teachers are perplexed about the level at which certain processes should be taught. Much research and experimentation has been and is being carried on in this connection by experts, with the resulting general belief that the proper time to teach

anything is when the need is felt by the child or children. The majority hesitate to set more than flexible grade placements. According to one school of thought, only what is actually needed by the child at a given time should be taught. As the child grows older in years other needs will arise until all necessary number work has been taught. Because of being more mature and because of his need for it the child will master material selected in this manner with greater ease and will be more certain of retaining it in shape for use.

While most course-of-study makers believe that interest and a felt need should be the basis for all work, many specify grade placements for certain processes or at least mention the grade level where mastery is finally to be expected.

In some states the course of study for rural schools suggests or directs that two or more grades be grouped and the work alternated by years in order to save more time for actual teaching and insure a group large enough to provide a social situation. Thus if fifth and sixth grades are combined, fractions are taught one year and decimals the next, alternately, according to a state plan. It may be suggested that all intermediate and advanced grades be grouped for the time being when processes in which more advanced groups may need review are being developed with the intermediate pupils. Or the opposite extreme of a Dalton or Winnetka type of individualized instruction contract may be recommended. There is also much to recommend the perpendicular unit in which all work thruout the school centers around a socially inclusive unit while each group bears the responsibility for that addition, measuring, marking, or graphing which is appropriate to its grade level in difficulty.

Studies show that multiplication and addition rank highest in social usefulness, with subtraction following, and the fourth fundamental, division, trailing. A second-grade group going to the store may need to use certain processes in order to earn and count the necessary money. A group may feel the need of more addition in connection with work in the room store. But with the possible exception of such instances, most school people are agreed that there is no value in number drill in the first and perhaps in the second grade. Children should spend that time in enjoying experiences or playing games, store, and so forth, which will lead to the development of meaning. A teacher's thoro knowledge of his pupils and the use of diagnostic tests will enable him to know what is lacking in individual pupils, but only his sensitiveness to need will enable him to know the opportune time for presentation of processes. This sensitiveness does not belong to some super-person but can be developed by the average classroom teacher who studies his group.

If a process is needed, however, why not teach it at the time it is needed and when readiness is present, instead of waiting until some higher grade? On the other hand, why should all of a certain process be taught in a given

grade when only part, perhaps a small part, is actually needed? The soaking-in process might thus extend over several years so that what had been met first on a primary level would contribute to the child's readiness for subsequent steps. Nor should the upper-grade teacher hesitate altogether to mention the usefulness of meaningful aspects of higher mathematics. While readiness is what keeps an individual learning and reaching further all his life, a too extreme adherence to gradation is to some degree the negation of this!

Once a teacher recognizes a readiness for a certain process that has arisen in a life situation or thru some special interest and there is the felt need for its mastery as a step toward something else, a big forward stride has been taken. Drill is the next logical step, and following that, the actual using of the facts and information in real situations.

So drill is the fourth horn of the dilemma. What drill is needed? How much should be given? When? What is the best way to provide it? There is no doubt that drill has a definite place in the development of skills in numbers, but that it follows interest and understandings is also sure. Drill should be attempted only after meaning is understood and the interest is definite enough to make repetition necessary and participation desirable as a means toward an end.

As has been stated, there is no value in number drill in the first and second grades. Even when drill is begun only a small number of new facts should be attempted at one time. The introduction may well be made to the group as a whole, but soon the normal group will break up into smaller dimensions as the children's needs and learning rates vary. Using the small group plan, individuals are better able to get the definite help needed, either from the teacher or from a pupil within the group, while drill with the whole class would be of little or no benefit to them.

There are different schools of thought in relation to the use and amount of drill. Among them there is one which holds that only what is actually needed by the child at a given time should be attempted. This school contends that as a child grows older a need will arise for all of the number work that is necessary, and he, being more mature, will then master it with greater ease.

There is another school which also believes that interest and felt need should be the basis of all work but which sets down certain grade placements of processes, set up by teachers themselves, which shall be taught. These are limited to processes that are socially useful in the life of an average adult and are appreciated by children as they come in contact with them.

Granted that drill plays a big part in the development of skills in numbers, overdoing it may bring about neglect and distortion of much that is good in its development. Children as a rule seem naturally to like arithmetic, but many have learned definitely to dislike number work owing to

the misuse of drill. This has certainly not been due to the conscious effort of any teacher but has resulted from a lack of understanding of underlying teaching principles or an unwillingness to put enough of self and time into the motivation of number work to bring about a feeling of success on the part of pupils. Thus while meaningful drill is greatly to be desired, too much drill or drill at the wrong time is not only useless but harmful, since it tends to kill the child's interest and initiative. With proper motivation and not overdone, it gives a feeling of pleasure, of hopefulness and satisfaction, thus filling a need in the development of skills.

The amount of time given to drill is an important item in the development of skill in numbers. Studies have indicated that the length of the drill period, as well as the intervals between the drills, has much to do with the effectiveness of the drill. Reasoning seems to call for longer drill periods than does work with fundamentals. The teacher has a great responsibility in the determination of the proper length of drill periods and the intervals between, for it is his task to decide when his pupils begin to grow tired. After there is evidence of fatigue no drill can bring good results. While no definite limit can be set, it is safe to say that as a rule shorter, split periods are far more worthwhile than long unbroken ones.



Weighing and Calculating Postage for Christmas

A new operation may well be introduced with a fairly long period since, according to the laws of learning, we should practice until a new habit is fixed. Even then, fatigue should be eliminated to get results. After the introduction the new process may be laid aside and left unmentioned for a period of forgetting. Further drill work would naturally come next and be followed from day to day by other and shorter drill periods. Thru an understanding of the process and with motivated drill, speed and accuracy can be improved, but it should be remembered that accuracy takes precedence.

Teachers are often puzzled, in their efforts to develop understanding and skill in numbers, about whether they should stop whatever is going on at the time a need arises and then and there teach the necessary processes, or whether to work the problem for the pupils, go on with what is already under way, and come back to the problem later. There are differences of opinion but the latter procedure has proven satisfying to teachers and pupils alike because, while it gives immediate satisfaction without spoiling the trend of thought, the drill period later permits mastery without the pupil's attention having been divided between conflicting desires. In this follow-up drill period, as in any other, the laws of learning should be in evidence. Just to repeat a process over and over has no value unless the effect is satisfying to the learner.

Many persons are confused in their philosophy of drill, forgetting that children should have a purpose to the attainment of which drill is but the means. The teacher should be so familiar with whatever textbooks, workbooks, and ditto worksheets are to be used that he can make them serve somewhat as tool sharpeners, to be used, laid aside, and used again, steering clear of both "common class" assignments and "working straight thru" the book. He should be especially wary lest ciphering straight thru the book become the pupil's aim or criterion of progress.

Motivate the necessary drill by giving honest praise; let pupils know the results of their daily work; give them a knowledge of whatever improvement is evident over a period of time; but most important of all, provide number experiences within their interest and in connection with useful, practical problems.

To summarize, the rural teacher who would have his pupils develop both skill and understanding in numbers will give careful attention to the number orientation of little beginners and to arithmetic readiness at each stage, bearing in mind that unless the child has been reached no teaching has been done. He will accept the responsibility for selecting and adapting curriculum units in which the use of numbers is needed to attain some desired end. He will utilize number situations in the community in which the child lives and everyday classroom situations in which there is need for numbers. He will use the program adjustments suggested by his

state course of study and others, always remembering that suggested grade placements are to be regarded as flexible suggestive guides and that when readiness for a certain process has arisen and there is a felt need for its mastery as a step toward something else it is the time to teach it. Finally, while making skilful use of the most up-to-date aids available, he will at the same time make the children's interest and felt needs the basis for drill.

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