A GUIDE TO CURRICULUM ADJUSTMENT FOR MENTALLY RETARDED CHILDREN

By

FLORENCE N. BEAMAN
CHARLES SCOTT BERRY
MAY E. BRYNE
VIRGIL E. DICKSON
RANSOM A. GREENE
LILLIAN M. HOFF
LETA S. HOLLINGWORTH
EDNA M. KUGLER
THOMAS V. MOORE
META ANDERSON POST
HENRIETTA V. RACE
BERTHA E. SCHLOTTER
ALICE W. WYGANT

Bulletin 1936, No. 11

Compiled and edited by

ELISE H. MARTENS

Senior Specialist in the Education of Exceptional Children
Office of Education

UNITED STATES DEPARTMENT OF THE INTERIOR - *Harold L. Ickes*, Secretary

OFFICE OF EDUCATION - - - - - - - - - *J. W. Studebaker*, Commissioner

UNITED STATES GOVERNMENT PRINTING OFFICE - - - - - - WASHINGTON : 1936

For sale by the Superintendent of Documents, Washington, D. C. - - Price 20 cents

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FOREWORD

Special administrative provisions for the education of mentally retarded children have become an established element of the public-school program. Special classes have been organized in abundance, but the improvement of the curriculum has not kept pace with the development of administrative facilities. In too many instances curricular activities for retarded children have lacked purpose or integration. The procedure has been either one of too close conformity to regular academic standards or a poorly conceived program of uncoordinated activities that at times approached mere "busy work."

Yet leaders in the field have long realized the need for purposeful planning of curriculum content in the light of the capacities, interests, and ultimate social destinies of the children to be served. Through the use of a special fund which was made available for the purpose of conferences, the Office of Education was able to call a few of these leaders to Washington to consider the entire problem of curriculum adjustment for mentally retarded children. This bulletin represents the careful thinking of the members of the conference. While specifically prepared with the needs of seriously retarded children in mind, the principles and the materials it presents are applicable also to the education of those whose intellectual level is only slightly below normal. Hence it should be helpful to all who are concerned with the teaching of children whose needs are not met by the academic content of a standard curriculum.

The members of the conference were as follows:

FLORENCE N. BEAMAN, teacher, the Little Red Schoolhouse, New York, N. Y.

CHARLES SCOTT BERRY, director, bureau of special education, the Ohio State University, Columbus, Ohio.

MAY E. BRYNE, director of special education, public schools, Minneapolis, Minn.

VIRGIL E. DICKSON, assistant superintendent of schools, Berkeley, Calif.

RANSOM A. GREENE, superintendent, Walter E. Fernald State School, Waverley, Mass.

LILLIAN M. HOFF, instructor, special education, State Teachers College, Salem, Mass.

LETA S. HOLLINGWORTH, professor of education, Teachers College, Columbia University, New York, N. Y.

EDNA M. KUGLER, advisor, special education division, State Department of Public Instruction, Harrisburg, Pa.

THOMAS V. MOORE, professor of psychology, the Catholic University of America, Washington, D. C.

META ANDERSON POST, director of Binet schools and classes, public schools, Newark, N. J.

HENRIETTA V. RACE, supervisor of schools for exceptional children, State Department of Public Instruction, Madison, Wis.

BERTHA E. SCHLOTTER, teacher, Lincoln State School, Lincoln, Ill.

ALICE W. WYGANT, teacher, public schools, Baltimore, Md.

ELISE H. MARTENS, specialist in the education of exceptional children, United States Office of Education, acted as chairman of the conference. KATHERINE M. COOK, chief of the division of special problems, United States Office of Education, served in an advisory capacity.

The Office of Education is deeply appreciative of the time and service given by busy persons to the completion of this project. To each of those who have contributed to the success of the meetings held and to the content of the bulletin which has resulted, we express our sincere gratitude.

BESS GOODYKOONTZ,
Assistant Commissioner.

A GUIDE TO CURRICULUM ADJUSTMENT FOR MENTALLY RETARDED CHILDREN

INTRODUCTION

THIS HANDBOOK is a cooperative project, the outcome of a conference called by the United States Office of Education to consider the problems of curriculum adjustment for mentally retarded children. The members of the conference are the joint authors of the bulletin.

Plan of work.—In October 1934, 13 leaders in the education of retarded children, working in various parts of the country, were invited by the United States Commissioner of Education to come to Washington for a 3-day conference. No detailed agenda were planned and no papers were scheduled. It was essentially a thinking conference, at which each member made his contribution in informal discussion centered about certain major topics. The result of the 3 days' work was a general outline of procedure, looking toward the publication of a handbook that might be helpful to all who are concerned with the adaptation of the curriculum to the needs of mentally retarded children. Each member of the conference accepted responsibility for the tentative development of one topic into a section which might ultimately be used as a chapter or part of a chapter. Copies of the manuscripts resulting from this plan of procedure were sent to every conference member for review and criticism.

In May 1935 the group gathered again in Washington and for 2 days discussed their own production. Numerous recommendations for revision were made, and editorial responsibility was assigned to the specialist in the education of exceptional children in the Office of Education. This

bulletin represents, therefore, the best thinking of selected educators, psychologists, and psychiatrists who are deeply concerned for the welfare of children seriously below normal in intellectual capacity.

Children served.—Obviously, the first thing to be done at a conference of the type described was to delimit the problem and define its scope in the clearest possible terms. In the first place, "mentally retarded children" were designated as those who because of poor intellectual endowment are unable to cope with the standard requirements of regular grades and are therefore considered fit subjects for enrollment in a so-called special school or class for intellectually subnormal children. These include approximately the lowest 2 to 5 percent of the school population. The term "mentally retarded" is thus used to include both lower and higher grades of subnormality. Some children, of course, are so seriously retarded in both social and intellectual development that they are more accurately termed "feebleminded." Others are much closer to the border line of intellectual normality. Both of these types, as well as the intervening groups, are found in special schools and classes, and all of them were included for consideration at the conference as representing the seriously deficient but educable children in our schools and institutions.

In the second place, recognition was given to the need of curriculum adjustment for mentally retarded children, wherever they are found. Whether in a regular or in a special elementary class, in a city school, or in a rural school, in a regular secondary school or in a special prevocational or vocational school, in a day school or in a residential school, their curriculum needs are the same, and the adjustment should be made in accordance with the limited capacities which they present. Hence, it was the purpose of the conference to come to some definite conclusions regarding the desirable curriculum adjustment to be made for them, in whatever segment of the school system they may be.

These two specifications should be kept in mind as successive chapters of the bulletin are read. They are given due consideration in appropriate contexts, but attention is called to them here for purpose of emphasis.

Function of the bulletin.—The function of a traveler's guide is to lead the way, to point out the dangers of the road, to call attention to the beauties of the landscape. But he takes not one step for his companion. The traveler must use his own feet, his own ears, his own eyes, if he is to fulfill the purpose of his expedition. It is this function of guidance which it is hoped the present publication will perform. It does not offer a curriculum ready-made, nor even part of a curriculum. Rather its purpose is to present the fundamental principles involved, to point out desirable bases for the selection of curriculum content, to suggest a variety of activities in keeping with these bases of selection, and to illustrate how such activities can be coordinated into a unit of experience. No person or group of persons, however skilled, can superimpose a curriculum upon classroom teachers working in a thousand different situations. Specialists can only point out the way in which a curriculum can be developed locally. They must leave to the State and to the community the task of applying the principles evolved to the situation at hand. This fact should be recognized by all those who would make use of the contents of the bulletin. Units of experience need local coloring. Community conditions must be recognized, geographic factors considered, and social interests observed. All of this can be done only by persons who are familiar with State and community situations. Hence, such a handbook as this purports to be cannot be exhaustive, but can only sketch the outlines of a picture the details of which must be filled in locally.

Plan of bulletin.—In the preparation of this material, members of the conference attempted to visualize the retarded boy and girl as they are ready to leave school to cope with the problems of everyday existence. This was the point of departure in determining which school activities should receive major emphasis. Moreover, it was agreed that all activities, to be most effective for instructional purposes, should arise out of the experiences of the children themselves. Hence, the unit of experience is given a prominent place in the plan of the bulletin.

For the sake of convenience, units of experience are classified in the successive chapters according to major content.

Such an arrangement, however, does not obviate the need for coordinating experiences that are concerned with several types of content or subject matter. A "unit" of experience presupposes an integration that recognizes the child as a unitary being with a totality of life experience to which every activity of the day contributes. It is the business of the school to make real to him the relationship among these several activities and to make them function in a vital way in his everyday life.

Considerable emphasis is given to this concept of integration, even to the point of repetition in connection with successive chapters. So also, certain other principles come to the foreground repeatedly in relation to various types of experiences. Such repetition is inevitable when one is attempting to show how each activity of the school should contribute to established objectives. It is hoped that the emphasis thus gained will be conducive to deeper understanding and realization of the progressive practices advocated.

No attempt is made to assign particular activities to particular grades. In the education of seriously retarded children, grades as such have no place—if indeed they have anywhere. Age and physical and social maturity are the important determinants in the selection of content, which must then be adapted to the mental capacity of the child. Any unit of experience on primary or intermediate level can be so handled that the oldest and the youngest, the brightest and dullest, will have work to do in keeping with his ability and interest. For advanced adolescent students the occupational point of view gains in importance along with ideals of homemaking and civic responsibility. Many units of work can be planned on such a basis. Even the teacher who has only 1 or 2 seriously retarded pupils in a class of 40 children can, through the technique of the unit of experience, make a place for every child in the room in keeping with his capacity. With such an arrangement the intellectually deficient pupil has far greater chance for individual participation and development than he can have in a class of 40 children in which the old-type recitation technique is used.

It is hoped that every person who carries responsibility for the education of mentally retarded children, whether the number be 1 or 100 or 1,000 will be able to secure some suggestive help from these pages. Since the task of curriculum adjustment in a given State will not be completed until the State itself participates in the project, a chapter is included in the handbook on "The State in Relation to the Curriculum." But in anticipation of that time teachers in rural centers and in many urban communities face the problem of making their own adjustments. City and county supervisors, where such exist, are continuously planning improvements in curricular procedure. To these the chapters that follow may offer nothing that is startlingly new in educational philosophy. Their function is rather to make clear the application of that philosophy to the education of a group of children who too long have been either subjected to demands which they cannot meet or permitted to mark time without accomplishing anything of social value. If the bulletin brings assistance in this respect to those who are eager to make the curriculum count for constructive social achievement in the lives of retarded children it will have served its purpose.—E. H. M.

CHAPTER 1: WHO ARE MENTALLY RETARDED CHILDREN?

IN PROPOSING any curriculum adjustment, we must have clearly in mind the group of pupils for whom adjustment is being made. We must know something as to their number (or frequency), their mental equipment, their possibilities of development, and their relation to the total population of school children.

FREQUENCY

In terms of frequency "mentally retarded" children are here defined as those who constitute the least able 2 to 5 percent of the juvenile population. This statement leads us to consider the great variability of human beings and the form of pattern which this variability takes. "All men are created free and equal" in a political sense, but it has long been an established fact of biology and psychology that from a physical and a mental point of view there is great inequality among them. The problems of education, which we are here considering, arise from the facts of intellectual inequality.

Individual differences among school children have been studied by scientific methods for many years. Begun in 1904, with the development of mental tests by Binet, the investigations made have established numerous facts. One of the most important of these concerns the frequency with which various degrees of intelligence occur among school children. Most children are about normal (average) in respect to intelligence, for in a statistical sense the word "normal" means "what the majority can do." A few fall so low on the continuous scale of ability that they seem quite incapable of learning. Just above these are those much more numerous ones who are somewhat less retarded,

and who in turn merge by imperceptible degrees into the normal group. At the extreme opposite to that represented by the mentally deficient are the children so bright that they learn much more and much more rapidly than the average and are ultimately capable of mastering much more complex ideas. These form a minority of approximately the same size as that included among the retarded, but it is not our purpose to deal with these children here. They are mentioned merely to complete the picture of the pattern resulting from the variability of human nature. Human beings are far more variable in mental traits than they are in physical traits. Among some thousands of pupils, all of the same age, the tallest will probably not be more than twice as tall as the shortest in stature; but the amount or complexity of the work performed by the most intelligent one may be a hundred times as great as that performed by the least intelligent.

The curriculum of the public schools is based primarily upon the abilities of the great number of intellectually average children. Educators have been rather slow to perceive the presence among pupils of what we might call the deviating minorities. Formerly the slow pupils were supposed to differ from the others in will power or in disposition, rather than in respect to the fundamentals of ability to learn.

We have found that incapacity for academic achievement, which to some extent characterizes about 25 percent of elementary-school children, becomes more and more pronounced as degrees of intelligence become less. The least intelligent children (those having intelligence quotients below 50 on the Stanford-Binet scale[1]) are incapable of attaining any effective control over words and numbers. Even those who test as high as 75 IQ are capable of only a limited degree of literacy. About 2 percent of an unselected school population have an intelligence quotient of 73 or less, and about 5 percent have an intelligence quotient of 78 or less.

As already stated, it is this group of from 2 to 5 percent of the school population which is being given special con-

[1] All references made in this bulletin to the intelligence quotient (IQ) are in terms of results on the Stanford-Binet scale.

sideration in these pages, but many of the principles set forth and the suggestions made are applicable also to that larger group immediately above it in intellectual ability, namely, those rating from about 78 to 90 IQ. These less retarded but still intellectually subnormal children have not as yet received much explicit attention in the organization of the public schools. Yet their needs are just as important as those of the least capable group and should be met through adjustment of the curriculum in keeping with the general policies outlined in this bulletin.

MENTAL EQUIPMENT

It is emphasized that the wide individual differences in intelligence that are revealed among school children through mental tests are of degree only. This fact is very significant for education. It follows that all pupils can deal with things, persons, and abstract symbols, but in vastly different degrees of complexity. Theoretically, a retarded child of any chronological age can acquire the information related to school subjects which normal 7-year-olds acquire, when his "mental age" is 7, as determined by standardized mental tests. Generally speaking, it is possible by means of available methods of mental measurement to tell when a given child is "ready" to learn abstract symbols (numbers, letters, words, maps) and to what extent he will be capable of mastering these. Actually, however, it must be remembered that the principles just stated apply to groups rather than to individuals, and that here, as elsewhere, exceptions occur that must be treated in keeping with the needs of the individual case. It must be remembered, too, that factors of physical health, personality, and environment are sometimes responsible for a seeming deficiency in intellect that disappears when the causal factor is removed.

Because a deficient child can by the time he is 16 years old learn a little of a given school subject, it by no means follows that such learning should become the goal of his education. It might perhaps be a wiser investment of time to center his education about the processes which mentally retarded boys and girls can best master. This idea has led to the question: Are the retarded equally deficient in all di-

rections? Through research studies it has been found that most mentally retarded children can learn to work with concrete materials and objects better than they can learn to work with symbols or abstract ideas.

In pursuit of these findings, experiments have been made to determine what sorts of handwork are acceptably carried on by boys and girls of less than 75 IQ. A great many different kinds of useful work can, in fact, be mastered by them. This is increasingly true of those testing higher—toward 80, 85, and 90 IQ. The world would certainly be a different, and perhaps a much less comfortable place, if all citizens below 90 IQ were to be eliminated from it. Many of the unskilled and semiskilled occupations would then have to be followed by persons too much occupied with ideas to feel satisfied with their endeavors. This would probably produce an undesirable state of affairs. Education should, therefore, take account of these facts: (*a*) That mentally retarded pupils can work more successfully with objects and materials than they can with the tools of literacy (words, numbers); and (*b*) that in the realm of symbols they can, as a group, learn about as much as their "mental age" may indicate, in terms of what average children of that age accomplish.

As for emotional experiences, the mentally retarded share the ordinary human emotions. They "have feelings", and their feelings are much more like those of ordinary persons, apparently, than their intellectual abilities are. They hunger and thirst just as others do; are made glad or sad, as their desires are gratified or not; are capable of affection, discouragement, and all the other emotional experiences common to man. These observations apply to all above the extreme of idiocy, where mental life is at a low infantile level.

POSSIBILITIES OF DEVELOPMENT

Previously, before studies of development had been made by quantitative methods, backward children were often described in terms of "arrested development." As a result of the work of Kuhlmann, in which the mental development of more than 600 institutional children was followed

over a period of 10 years, it now seems that the condition of most of such children is one of simple and continuous mental inferiority. Mental development has thus been placed upon a basis of predictability. For instance, a pupil of the mental level represented by an IQ of 50 will probably when mature have approximately the mental ability of an average 8-year-old child. No sudden and unpredictable "improvement", or "spurt of growth", can be expected.

The researches of the past 20 years have thus made it possible at least tentatively to select retarded children for special education when they enter school, at 6 or 7 years of age, instead of waiting for them to prove their incapacity through several years of wasted effort. The imperfections of mental tests are recognized, but they are as yet the best existing measure of intellectual capacity. The small amount of uncertainty arising from the "probable error" of scores from available tests can be fully and justly cared for by making reexaminations whenever doubt may arise and by taking into consideration the influences of extraneous factors, such as health, personality, and environmental situations. If this is done, the mistakes of assignment for special education should be negligible.

Under the system of progress by grade, retarded children are frequently subjected to tasks which they cannot possibly understand or perform. To escape the sense of inadequacy and blameworthiness they may become truants or engage in mischief. Studies of undesirable behavior among pupils show that there is a tendency for disciplinary problems to be concentrated among retarded children who are not given the special educational help that they need. The known facts about development, combined with the availability of reliable mental tests, give educators the power to exempt backward children from the suffering incident to tasks that are beyond their ability. Failure and wasted effort can now be avoided.

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RELATION TO THE TOTAL POPULATION OF SCHOOL CHILDREN

The educational problems presented by retarded children are not, however, to be considered entirely by themselves. Their relation to the total task of the school must be kept in mind. Where no special curriculum or special organization is set up for the needs of these pupils, they drift in the regular grades and take much more than their share of the time and energy of a conscientious teacher. The undesirable forms of behavior into which they fall occupy his attention to the exclusion of work which would be to the profit of the normal pupils. Sometimes the presence of adolescent boys and girls among the children of the elementary school creates socially undesirable situations among the pupils themselves.

Thus various reasons are provided, from the data of educational psychology, for setting up a special curriculum for retarded pupils both through childhood and through adolescent years, apart from the much younger pupils who are their equals intellectually but not physically or in social interests. Adolescents, maturing physically and developing attitudes that lead up to adult life, are not well placed among children of the third, fourth, and fifth grades, where under conditions of present organization in many school systems, they are likely to accumulate.

SUMMARY

We may summarize briefly our knowledge of the retarded child by saying that we know the approximate frequency of occurrence of such children; we know how to identify them; we know that they can work much more successfully with concrete objects and materials than with symbols and abstract ideas; we know that as a group they cannot be made normal by any system of education, because development is a function of innate forces which are relatively stable throughout the developmental career; and we know that their presence in the same classes with normal pupils frequently creates difficult problems for all concerned. Basing our considerations on these established facts, we may proceed to formulate rational suggestions for the special education of retarded children.

SUGGESTIONS FOR READING

BERRY, RICHARD J. A., *and* GORDON, R. G. The mental defective: a problem in social inefficiency. New York, McGraw-Hill book company, 1931. 146 p.

A general introduction to the problem of mental deficiency in its physiological and social aspects. Deals with the general nature of the problem, the neurological basis of mental deficiency, the social implications involved, and recommended treatment.

BURT, CYRIL. The subnormal mind. New York, Oxford university press, 1935. 368 p.

An extensive treatise devoted in part to the psychology and treatment of subnormal children. Consideration is given also to juvenile delinquency and children's personality difficulties. Written by an English author of note in the psychological field.

HOLLINGWORTH, LETA S. The psychology of subnormal children. New York, Macmillan company, 1920. 288 p.

This book is addressed primarily to the large group of teachers who are working with mentally deficient children. Provides a basic knowledge of the psychology, physical traits, and general nature of the mentally deficient.

TERMAN, LEWIS M. The intelligence of school children. New York, Houghton Mifflin company, 1919. 317 p.

One of the earlier publications on the problem of individual differences in intelligence, with attention to the use of psychological tests in discovering such differences.

CHAPTER 2: PHILOSOPHY AND OBJECTIVES

EDUCATION FOR the mentally retarded is not different in its aim from education for any group of children. This aim is to teach the individual how to live better; to teach him to use all of his capacities; to teach him to become a useful member of the social group. Whether he is in a day school or in a residential school, the general purpose is the same. The social group of which he is a member may be the community at large or it may involve the more circumscribed life of the institution. Yet the aim is always to make him a better and more efficient member of the group in which he lives. This is the basic philosophy underlying every curriculum adjustment.

If one analyzes the concept of social efficiency, two traits stand out as of paramount importance—self-expression and self-control. To be able to express one's self in work and play, in individual and in group action in terms of personal abilities and interests is a primary requisite for happiness and efficiency. But to be able to control one's self in keeping with socially accepted standards of behavior is even more important. Self-expression without self-control leads to chaos and ruin. Criminals and ruthless war lords express themselves and strike terror to the hearts of the community and the Nation. With all the emphasis that has been placed in recent years upon the need of permitting the child to "express himself", it should not be forgotten that unless at the same time he learns to "control himself" for the good of others, his life will be marked by failure.

GENERAL OBJECTIVES

In accordance with this basic philosophy, there are certain general objectives pertinent to the education of retarded children which should help to determine what curriculum adjustment should be made for them. These con-

cern primarily their education for achievement in the world of knowledge, in occupational life, in social relations, and in leisure time.

Consideration of capacities, limitations, and interests.—The need of educating each child in keeping with his capacities, limitations, and interests is almost axiomatic. While this philosophy applies to all children, it becomes more imperative in dealing with mentally retarded pupils because their limitations are greater and their interests are less varied and less extensive than those of normal children. It is tragic to see the mentally retarded child drilled by a teacher hour after hour on matters in which he has no interest, on matters which are beyond his capacity to understand, and on matters with which he has little if any prospect of ever associating in ordinary life.

If a child is considered mentally retarded he has already demonstrated a certain lack of capacity to learn. It is futile for the ordinary classroom teacher to attempt to force such a child to master academic goals that are beyond his mental reach. The curriculum should be so organized that units of instruction may be provided to fit varying abilities. Public education should help each child to advance as far as his capacity permits him to go with a reasonable amount of teaching effort but, lacking the capacity to do standard school work, he should be offered something different which will better suit his needs rather than merely less of the generally prescribed curriculum. Limitation of his school program to the mastery of mere minimum essentials of academic knowledge will never prepare him to live a useful social life.

Participation in the world's work.—Each child should be educated for some participation in the world's work provided his handicaps are not so great that he is completely barred from productive employment. It may be found with proper training that the child is able to do certain kinds of work which are helpful. Whatever his capacities are, they should be discovered and should be utilized. As adults, seriously retarded children will ordinarily work under supervision in the occupational world. Curriculum offerings should therefore be presented always with the thought that supervision and direction of the child must fill those

gaps caused by his deficiencies. Each retarded child is almost sure to show weakness of attainment along several lines which, even with the best instructional effort, still leaves him below par as an independent member of the social order in which he will live. One must think of his education, then, as giving him help for partial if not complete self-support. Supervision provided by the home or by society must do the rest.

Participation in social and recreational life.—Each child should be educated to appreciate social, civic, and cultural values and should be led to participate in those within his reach. Helpfulness and cooperation in civic responsibilities, wholesome fellowship with others in group activity, and the ability to enjoy leisure time are all essential to the well-being of the individual as well as of the community. Even accomplishments in music or dancing or games of physical skill are not uncommon among mentally retarded children. Those who have ability in such fields obtain much enjoyment out of life in society with others, and at times contribute much to the enjoyment of others. It is just as important to educate the mentally retarded child to be happy and efficient in his social relationships as it is to try to make him able to earn a livelihood. His life, like that of all others, is composed of living as well as earning.

Consideration of interests of all children.—Finally, in the education of the mentally retarded child, one must ever keep in mind the interests of all children. Through long and painstaking training some of them may succeed in doing acceptable work of a type ordinarily expected of normal children. They may even make a product approaching in quality that which is produced by the world at large. But the efficiency thus attained and the product made may represent false notions of social or industrial efficiency. The objectives of education for such children are complicated by the necessity of considering them and their product in the light of their relation to the entire social unit either in the school or in the community. As already emphasized, they must not be permitted to usurp too much of the time which should ordinarily be given to the instruction of normal children in regular classes. Neither should they be

permitted to spend an undue amount of time in learning skills that they will never use. In the present social order there are many more competent people ready and anxious to work than there are jobs to fill. If, therefore, mere industrial efficiency in the abstract were the goal, many mentally retarded children would receive no attention whatever. Yet they are and probably always will be with us as a part of the social order. Hence, they must be educated to contribute their part to life and to participate in industrial activities that are on their own level; or else they must be given custodial care as dependent and perhaps antisocial individuals, kept at the expense of the rest of the social order. Obviously, education and partial supervision are less expensive than complete institutional care.

SPECIFIC OBJECTIVES

Let us visualize the 16-year-old mentally retarded child about to leave the special class. Let us assume that the special class has equipped him with the simple tools of learning, in order that he may not be at a loss in the simple life which he is to lead. He may be able to solve arithmetical computations with a reasonable accuracy comparable to that of a 9- or 10-year-old. He reads rather haltingly the simple Indian stories in fourth- or fifth-grade readers. His hand is equipped to do simple weaving, to make baskets and raffia napkin rings, to produce a suitable tie rack and a pair of book ends.

Excellent as this education may be, visualization of the problems he must meet in the community proves it is not enough. He must have an education whose experiences, first of all, have fostered day by day:

1. An ease and a joy in social relationships that enable him to find friends and to participate in social experiences.
2. The knowledge and disposition to keep physically well in order to enjoy life to its maximum.
3. An ability to plan and to choose his leisure activities wisely.
4. An ability to cook his own food, care for his own clothes, and to make his dwelling habitable.

5. The ability to earn as much of the necessities of life as possible.
6. Enough general knowledge of specific skills to spend his earned salary wisely; and enough general knowledge of the products necessary in sustaining life to give meaning to their use.

These are the specific objectives which must be kept in mind if the retarded child is to go out from the school equipped to carry on successfully in terms of his own ability. Life for him will be largely a day-by-day experience of work and play, in home and shop, and community. It is to take his place and to make his contribution in this situation that the school should prepare him. Every activity, every field of experience introduced into the curriculum must be justified on the basis of its contribution to the objectives named.

SUMMARY

1. The basic philosophy underlying the education of retarded children is no different from that recognized for all children. The fundamental aim of all education is to teach children to live wisely and well in the environment in which they find themselves.

2. The realization of this fundamental aim of education as applied to retarded children requires that in any curriculum adjustment made for them emphasis be placed upon:

(*a*) Education in keeping with the capacities, limitations, and interests of each child.
(*b*) Education for some participation in the world's work.
(*c*) Education for wholesome social experiences.
(*d*) Education in keeping with the interests of all children.

3. The application of these principles demands that for mentally retarded children specific objectives be formulated of a much simpler and more practical nature than those which can be utilized with normal children. Happy social relationships, physical efficiency, wise use of leisure time, earning capacity, and acceptance of home responsibilities

are of major importance. These should all be interpreted in the light of the limited sphere of activities which retarded children will experience in adult life.

SUGGESTIONS FOR READING

FEATHERSTONE, WM. B. The curriculum of the special class. New York, Bureau of publications, Teachers college, Columbia university, 1932. 157 p. (Contributions to education, no. 544.)

The author condemns "the subject matter-set-out-to-be-learned policy" and urges that teachers of special classes use their "opportunity to make possible a truly significant educational experience for pupils" through first-hand contacts with life values.

INGRAM, CHRISTINE P. Education of the slow-learning child. Yonkers-on-Hudson, New York, World book company, 1935. 419 p.

On the basis of extensive supervisory experience in a city school system, the author discusses physical, psychological, and educational phases of the problem of mentally retarded children. Much practical information is given regarding instructional content and methods.

INSKEEP, ANNIE D. Teaching dull and retarded children. New York, Macmillan company, 1926. 455 p.

The author is an experienced teacher of mentally retarded children. She gives numerous concrete suggestions as to the type of instruction which has been most effective in her own classroom. Includes discussions of reading, language, spelling, arithmetic, and other usual subjects of the curriculum, with some attention also to games and the "education of the hand."

WHIPPLE, HELEN DAVIS. Making citizens of the mentally limited. Bloomington, Ill., Public school publishing company, 1927. 374 p.

Discusses the subject matter to be taught in segregated special classes of public schools. Places emphasis upon those materials which meet a present need of the pupil and appeal strongly to his interests. Adds to the work in the three R's practical application of the manual arts, citizenship, character, and health education.

CHAPTER 3: DIFFERENTIATION OF CURRICULUM ACCORDING TO AGE AND ABILITY LEVELS

UNDER THE laws of compulsory school attendance as commonly administered, it is possible for the child who progresses regularly at the rate of a grade each year to complete at least the junior high school (or the ninth grade) by the time he reaches the age when he can legally leave school. However, it is a significant fact that although the junior high school course of study has been planned to meet the needs of the early adolescent period, a very large percentage of school children reach the end of the period of compulsory school attendance and leave school before they have completed the junior high school course of study.

Imagine a well-balanced meal consisting of six courses. The courses are served in a fixed order and each course must be completed before the next one is served. Would anyone say that the slow eaters who could consume only the first three or four courses had a well-balanced meal? What is frequently lost sight of is the fact that the slow eaters of little capacity for food, surfeited with soup and fish, are the first to leave the table, not the fast eaters of greater capacity. In school it is the slow child with little appetite for the mental food provided who is soon surfeited and leaves school at the earliest possible moment. Under traditional requirements, he may have completed only the third or fourth grade, but when he reaches the age of release from school he goes out with little learned and none of it of practical value to him in meeting the life situations of an adolescent or adult.

In considering, then, the curriculum adjustment needed for mentally retarded children, the emphasis must be placed upon planning the best education that can be given over

a period of 9 or 10 years rather than upon the completion of grade requirements. The information, habits, and attitudes necessary for wholesome participation in community life must be acquired if at all during the period of compulsory school attendance, since few seriously retarded children remain in school beyond that time. Manifestly, then, chronological age, as well as mental age and intelligence quotient, should be a guiding factor in determining curriculum content.

It is proposed, therefore, that any curriculum for retarded children be organized in the light of the needs of two groups, namely, the preadolescent group (from approximately 6 to 12 years in chronological age) and the adolescent group (from approximately 13 to 16 or 18 in chronological age). It is further proposed that each of these groups be divided into two classes according to approximate mental age, as follows:

1. Preadolescent group—
   - (*a*) Children having a mental age under 6 years.
   - (*b*) Children having a mental age from 6 to 9 years.
2. Adolescent group—
   - (*a*) Children having a mental age below 9 years.
   - (*b*) Children having a mental age of 9 or more years.

The above classification takes its point of departure from the consideration of the chronological age of the child and those interests and abilities which are determined by physical maturity. It also takes into consideration the mental age and intelligence quotient of the child in that the instruction within the chronological age groups should be adjusted to meet the varying capacities of children of the respective mental age groups. It is, of course, rare that any given class will include only children of a particular chronological or mental age group. In all but the largest cities and residential schools the teacher is much more likely to have in his class children of varying ages and varying abilities, some of them with a mental age below 6 and some with a mental age considerably higher than this. In such cases

it is his responsibility to help each child to fit into the general program of the day according to his age and ability.[1]

THE PRE-ADOLESCENT GROUP

Mental age below 6 years.—It is a generally accepted fact that a child is not intellectually ready for instruction in reading until he has attained a mental age of at least 6 years. It is logical to conclude from this fact that, for children who have a mental age below 6 years, regardless of their chronological age, that part of the curriculum dealing with reading, writing, and arithmetic should be wholly omitted, and that emphasis should be placed upon motor and sensory training, personal hygiene and habit training, improvement of speech, emotional control, rhythm, drawing, and performance of simple activities at school and in the home. Young mentally deficient children are extremely restless, often agitated, noisy, untidy, and sometimes destructive. A program should be arranged that will bring bodily fatigue through constructive activity that leads to habit formation. Frequently there are physical defects which must as far as possible be corrected. Deficiency in sight, in hearing, in touch, and in the muscular sense all too often accompany mental deficiency. The teacher should, therefore, provide social and mental activities that will increase the power of perception as well as promote a better social adjustment. Regular exercise, proper muscular coordination, cleanliness in personal habits, hygienic habits of eating, should all be emphasized in the instruction given.

To teach these children to live in a social environment is far more important than to attempt to teach them to read. During this process of social adjustment the child will himself be getting ready to read. As he reaches a mental age of 6 he will approach the task with not only an adequate mental development but also an enriched background of meaningful experiences, an enlarged speaking vocabulary, a lengthened and more stable span of attention, and some degree of muscular coordination.

[1] While this bulletin is not concerned with problems of organization, it is emphasized that the practice of placing young subnormal children with those of adolescent age is exceedingly unwise.

The following are suggestive of the types of experiences which can be used to advantage with children belonging in this group:[2]

1. *Habit training.*—Emphasis upon personal cleanliness and neatness; proper toilet habits; care of property (such as crayons, paste, coat, rubbers, etc.); safety; food habits; health habits.
2. *Social experiences.*—Discussion and presentation of common home, school, and community relationships, such as those involving father, mother, baby, sister, brother; schoolmates, school safety officers; policeman, fireman, visiting nurse, street cleaner.
3. *Sense training.*—Recognition of name when called; matching shapes, colors, sizes, and positions of objects; picture-completion puzzles; observation of natural phenomena (sky, clouds, trees, sunlight, shadow); recognition of objects by sound, by smell, by touch; recognition of food elements by taste; recognition of primary colors.
4. *Speech training.*—Emphasis upon clear enunciation; correction of baby talk, broken English, lisping, stammering, and other speech defects.
5. *Muscular coordination.*—Rhythm exercises, marching, dancing; outdoor games; use of large muscles to accompaniment of musical instrument or singing; exercises such as walking a balanced rail, stepping through the rungs of a slightly elevated horizontal ladder, walking over a stile of three or four steps.
6. *Nature study.*—Acquaintance with common pets, flowers, trees; seasonal weather changes.
7. *Manual training.*—Hammering nails into a block of wood; carrying household articles as needed; stringing spools, beads, and buttons; coarse needlework on materials that carry a design; cutting paper and cloth according to pattern with a pair of scissors; carrying blocks, pieces of wood or stone, sand or gravel, from one place to another,

[2] See also the consecutive chapters of this bulletin dealing with specific types of experiences.

or gathering them into a pile in the center of the room or yard.

All of the foregoing activities and experiences of similar type can be used as the foundation for training in oral language. Moreover, they can be made more effective if they are integrated into a unified program of work, planned about a center of interest, and forming a teaching unit.[3] In other chapters of this bulletin are described numerous experiences which can with adaptation be used with this preadolescent group of very low mental age.

Practice in muscular and manual activities leads to increasing physical coordination and ability to perform tasks of successively higher level. Usefulness about the school or institution should be encouraged. Boys can learn to handle shovel, hoe, and wheelbarrow; to help in digging gardens or in clearing land of stones. Girls can assist in household duties. The objective of the whole program should be to make the individual happier and more comfortable as well as useful by helping him to contribute something to the social life of which he is a part.

Mental age above 6 years.—The children of this group are usually from about 8 to 12 years old, and constitute what are ordinarily called the "primary" and sometimes the "intermediate" special groups. They are ready for academic experiences in reading, writing, and numbers, and should be given an opportunity to make progress in these fields in keeping with their ability to advance without the sacrifice of much more important social values. The principles developed in the successive chapters of this bulletin apply directly to their education.

THE ADOLESCENT GROUP

For all adolescents of retarded mentality who are capable at all of profiting by such instruction, it is urged that emphasis be placed upon:

1. Appreciation of social and civic values and participation in social and civic activities, either in the community or in the institution.

[3] Special consideration is given to the unit of experience in ch. 4. See also appendix A for "Suggested Activities for Unit on the Home, Outlined for Children of Preprimary Mental Development."

2. Manual activities in the shop, the kitchen, the laundry, the sewing room, and in various types of handicraft of a prevocational type.
3. Health and physical training; sports and games.
4. Preparation for homemaking (for both boys and girls) through experiences in the usual housekeeping responsibilities, household budgeting, child care, home beautification, and the general repair work so often needed in the home.

Whatever in reading, arithmetic, music, art, literature, science, and other content subjects contributes to the above goals is justifiable, provided it is planned on the level of the child's ability to comprehend, and also provided it does not usurp the time that should be given to the major objectives of a very practical nature. Children in the adolescent group having a mental age below 9 years will obviously work on primary levels of academic experiences, while those having a mental age above 9 years will be able to achieve on a higher level. Both groups, however, should have the same opportunity to give the greater part of their time and energy to those activities that are definitely related to the situations they will face when they leave school or when they take their places as adults in institutional life. Hence work of the so-called academic type should be reduced to a minimum.[4]

SUMMARY

The education of retarded children should be so planned that by the time they leave school at the age of 16 or 18 they will have had the types of practical experiences needed to help them to live better lives as citizens, workers, and parents, or (if in a residential school) as adult members of an institutional community. In preadolescent years sensory training, academic experiences, and other phases of curricular activity should be planned for each child in the light of his mental level and ability to progress. When he reaches the adolescent period, regardless of his previous educational achievement, emphasis should be placed upon civic, social, manual, and prevocational activities having a direct bearing upon the life situations to follow.

[4] See appendix B for statement of program recently organized in a large city for retarded boys and girls of junior-high-school age.

SUGGESTIONS FOR READING

ANDERSON, META. Education of defectives in the public schools. Yonkers-on-Hudson, N. Y. World book company, 1917. 104 p.

Discusses selection of children, the curriculum of the special school, and its place in the public-school system and in the community. Special attention is here called to chapter 4 of the book, which deals with curricular activities for young children of retarded mental development.

DESCOEUDRES, ALICE. The education of mentally defective children. (Translated from the French by Ernest F. Row.) New York, D. C. Heath and company, n. d. 313 p.

Describes the general organization of special schools and classes for the mentally deficient in Europe. Discusses school programs and methods to be used in teaching various subjects of the curriculum in special classes. Also gives suggestions for games and for projects in hand work and other fields.

GESELL, ARNOLD. The retarded child: how to help him. Bloomington, Ill. Public school publishing company, 1925. 100 p.

A manual of practical suggestions for planning an individual program involving a variety of activities, handicraft, and vocational work for the deficient pupil.

HOLLINGWORTH, LETA S. The psychology of the adolescent. New York, D. Appleton and company, 1928. 259 p.

Gives basic material for understanding the nature and needs of adolescent boys and girls. Principles are discussed which are common to the growth of all children, regardless of intellectual capacity. Bibliography.

JOHNSON, HARRIET M. The art of block building. New York, The John Day company, 1933. 47 p.

The author presents the use of blocks with young children as a medium of expression, and develops the sequence of experiences common to children in playing with them. Illustrated.

WRIGHT, LULA E. A first grade at work: a nonreading curriculum. New York, Lincoln school of Teachers college, Columbia university, 1932. 247 p.

Contains suggestive material for curricular activities for children who are not yet ready to attempt the mechanics of reading. Bibliography.

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CHAPTER 4: EXPERIENCE AS A BASIS FOR CURRICULUM CONSTRUCTION

CONCLUSIVE EVIDENCE that mentally retarded children are all too frequently expected to absorb a "diet" prepared for normal children may be found in the examination of courses of study prepared for use in special classes.[1] These contain much which mentally retarded children cannot assimilate. They lack many of the practical values needed for later adjustment to community life. Little emphasis is placed upon the integration of academic experiences with life situations. Practically no course affords adequate experience in social adjustment.

The selection of content for special courses of study is something more than an arm-chair problem. The primary consideration should be the children and what is known about them. The daily observation of subnormal children within and without the classroom; the careful study of their inclinations and abilities to deal with present problems; the interests which for them color life and make it complete—these are the bases upon which curriculum adjustment must be made. In a word, the experience of the child is the teacher's cue. He must reach out and bring that experience into classroom situations in such a way that the child will in turn be able to go from the classroom prepared to meet the same type of experience outside with a better understanding of its meaning, a greater ability to handle himself in relation to it, and with more satisfying results. There is, therefore, no better way to achieve the specific objectives of instruction listed in chapter 2 than by permitting the child to experience day by day the grow-

[1] Such studies have been made, as, for example, by Florence N. Beaman, in "An Experimental Curriculum for Special Classes." Unpublished Master's Thesis, Northwestern University, 1932. (pp. 7–14.)

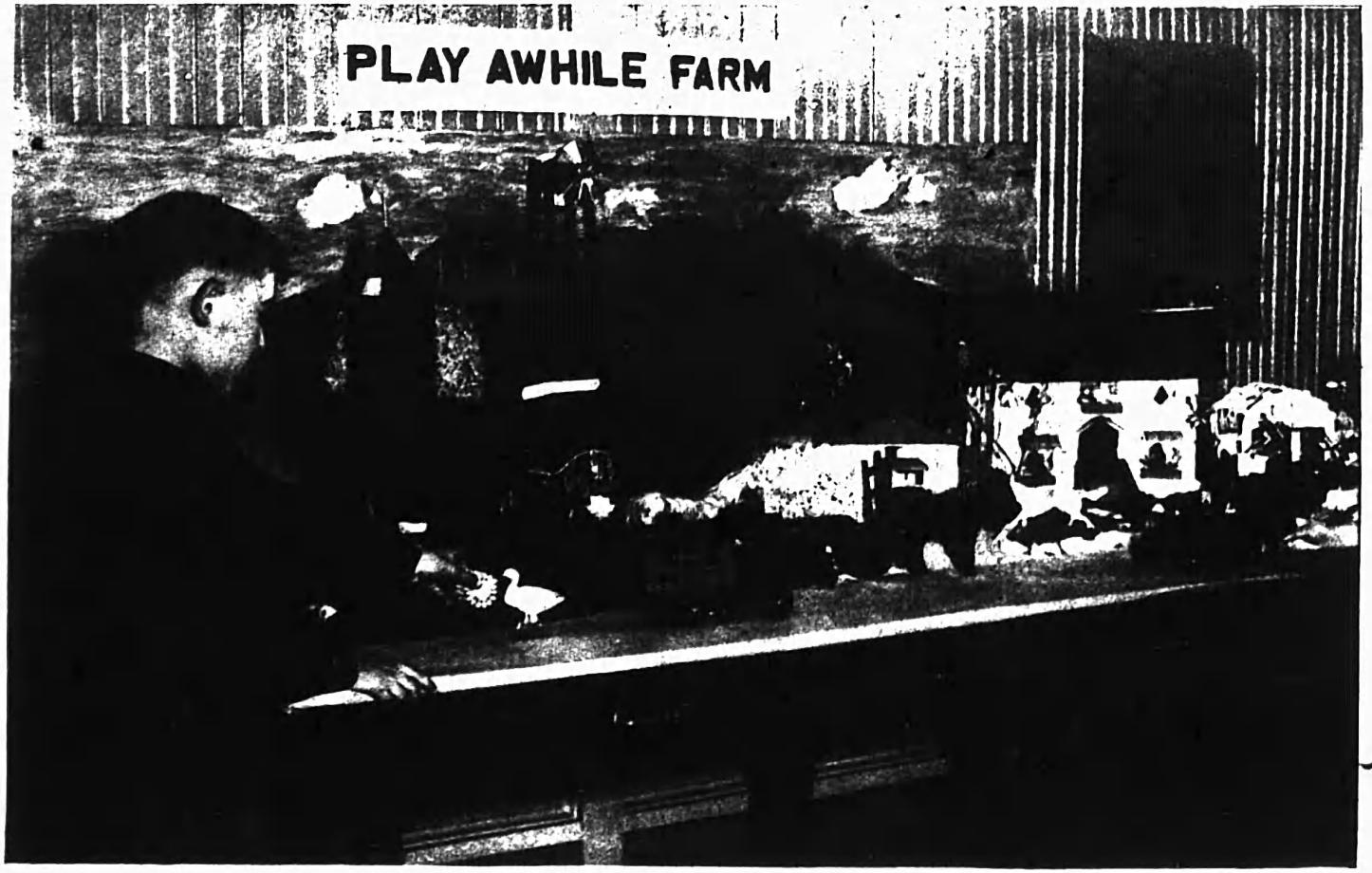
ing ability to work and to play with companions; actually to prepare food and clothing for use; to spend money for necessities; and to master the skills that are needed for carrying out in reality the needs of his daily life.

THE UNIT OF EXPERIENCE

Experience in daily living in a special classroom cannot proceed at random, nor can all experiences in living with their varying degrees of complexity be utilized at once. The teacher who has previously merely asked himself, "When must I teach this child to borrow in subtraction?" may now ponder upon the child's ability "to make bread for the next day's meal" or the ability to execute over the telephone the next day's order to the grocer. As in other programs, there is a time in the child's day-to-day life when certain aspects have more color and meaning than at other times. Hence the "unit of experience" is introduced in order to facilitate the organization of experiences at levels at which they are most efficacious in the child's living. The unit of experience may be defined as *an actual experience in living related to the child's immediate interests and environment, which in turn related to his total experience makes for richer and more vital living.*

Units of experience will necessarily differ with every group of children, but there are three basic attributes which give to the well-developed unit of experience its value. In the first place, the experience or activity should be real and not make-believe. There are enough real experiences in every environment to eliminate the need of resorting to experiences from foreign environments or of setting an artificial stage. For example, the experience of mailing letters and packages can in many situations assume the natural activity of going to the post office and actually mailing the desired material. A child's experience with flour should be the actual preparation of foods involving the use of flour rather than the construction of a cardboard flour mill from which the product comes.

In the second place, the experience should provide for cooperative living. It should contribute to the child's understanding or experience of the feeling of working together.



Courtesy of Milwaukee, Wis., Public Schools.

THIS "PLAY AWHILE FARM" WAS THE RESULT OF THE CHILDREN'S VISIT TO A REAL FARM.

Courtesy of Newark, N. J., Public Schools

A BEDROOM FURNISHED ON THE BASIS OF DAILY NEEDS AND EXPERIENCES WITH FURNITURE MADE OF IRON WOOD AND SCRAP LUMBER

Even if the experience itself is so arranged that the child does some of his work alone, the results should be a part of the whole related scheme.

In the third place, the results, whether tangible or not, should be emotionally, physically, and mentally satisfying to the child. Within every experience there should be levels of growth, so that each child is accomplishing what is actually most necessary to his own satisfaction of needs. In other words, the experience may have something to contribute to the social needs of an 8-year-old child and yet involve such simplicity of operations that it satisfies also the motor facility and mental development of children 2 or more years younger.

EXAMPLES OF A UNIT OF EXPERIENCE

Experiences basic in helping the child to live fully his present life differ in different localities. Experiences common to life in a large metropolis of the size of New York would be foreign and artificial to a southern rural community. No one set of experiences or the units thereof can serve all groups adequately. All children, however, live in a world where daily food, clothing, shelter, and play life have a meaning for them. Therefore, two units of experience based upon home and community life are used here for illustrative purposes.

Unit on foods.—In one classroom a large unit on home life was divided into activities related to foods, clothing, and shelter. The experiences with foods are presented in the accompanying chart to illustrate the type of organization used. The experiences of the classroom were real in that the children prepared their daily lunch at school. The tasks which needed to be accomplished were seen first as a whole. The following activities were included:

1. Preparation of menus.
2. Preparation of personal shopping lists.
3. Preparation of telephone shopping lists.
4. Preparation of vegetables.
5. Preparation of meat.
6. Preparation of desserts.
7. Preparation of baked foods and jellies.
8. Setting of tables.
9. Correct eating.
10. Clearing of tables.
11. Stacking of dishes.
12. Correct disposal of garbage.
13. Washing of dishes.
14. Replacement of dishes in cupboard.
15. Preservation of left-over foods.
16. Cleaning of kitchen.
17. Washing and ironing of lunch cloths.
18. Collection of lunch funds.
19. Computation of lunchroom bills.
20. Payment of bills.

These tasks were graded upon the twofold basis of (1) spontaneous selection by children for social satisfaction necessary to their own age, and (2) manual dexterity and mental comprehension necessary to complete the task properly. At lower levels the simplest experiences in themselves were sufficient for complete satisfaction to the child. Older children needed wider contacts in the community. Some of the activities demanded motor and mental skills for satisfactory completion. Such skills were taught and used as they supplied the needs of the activities, with sufficient drill to make the instruction function effectively. Careful check was made of the skills needed to complete satisfactorily each experience.

The accompanying chart represents only one type of experience which was a part of the larger unit on "home life." The organization of work provides for four levels of ability as determined by chronological and mental ages of the pupils concerned. The four groups are those specified in chapter 3, namely (1) preadolescents with mental age below 6 years; (2) preadolescents with mental age from 6 to 9 years; (3) adolescents with mental age below 9 years; (4) adolescents with mental age of 9 or more years. On the chart the social characteristics of each group are noted, suitable experiences are indicated, with specific references to the trips made, and examples of activities in the various fields are listed that can be used with each group. It is to be hoped that no teacher will have all of these age and ability levels represented in the same class, but the chart

Chronological age	Mental age	Social characteristics	Experiences	
1	2	3	4	
6 to 12	Below 6	1. Preschool and kindergarten characteristics. 2. Individualistic play. 3. Individualistic desires. 4. Random and seemingly unpurposeful activity. 5. Manipulistic play—with objects. 6. Unfinished products in work.	1. Daily trip to market or store with older group to do buying. 2. Carrying basket home and arranging purchases on shelves. 3. Washing vegetables and fruits. 4. Dramatic play—parties, home and store situations.	To s wit (((((
6 to 12	6 to 9	1. Primary or intermediate characteristics. 2. Desire for companionship in play. 3. Purposeful activity in that the product satisfies own desires. 4. Beginning of formation of small groups.	1. Setting tables. 2. Pouring milk, cutting bread and butter for tables. 3. Making bread and muffins. 4. Making butter. 5. Cooking simple desserts. 6. Clearing tables and stacking dishes.	1. To (((2. Fis
13 to 16	Below 9	1. Adolescent characteristics. 2. Ability to combine in small groups for group work. 3. Use of tools of learning to facilitate activity. 4. Completion of work for use. 5. Response to repetition and drill.	1. Buying food. 2. Preparation of vegetables. 3. Assistance in cooking. 4. Washing and care of dishes.	To: (*a*) (*b*) (*c*) (*d*)

UNIT ON HOME LIFE. P

Topic: Foods as a Part of Dail

Trips	Social science concepts	Reading activities	Arithmet
5	6	7	
stores in company with older groups: (*a*) Bakery. (*b*) Dairy. (*c*) Market. (*d*) Grocery. (*e*) Farm.	1. Articles of food as part of own meals. 2. Immediate source of food: Farmer or store. 3. Mother's part in preparation of foods. 4. Health values of food. 5. Table habits. 6. Identification of foods by name.	(Prereading in nature.) 1. Representation of food objects seen at store—modeling, drawing (size, shape, and color). 2. Stories and games. 3. Development of vocabulary through oral conversation. 4. Identification by name and classification of food, as fruit. 5. Dramatic play: Parties and home situations. 6. Oral directions.	1. Buying at sto 2. Countin 3. Liquid Glass (milk 4. Buildin ical Near, light; few; round 5. Play wi half-p ed be 6. Sense o of b scale
To— (*a*) Stores. (*b*) Warehouse where food comes in. (*c*) Vegetable and fish markets. (*d*) Dairy plant. (*e*) Bakery. (*f*) Freight cars, refrigeration cars. (*g*) Farm. Fishing trip.	1. Experiences on play level: (*a*) Growing of food on farm. (*b*) Selling of food at market. 2. Kinds of food. 3. Uses of food.	1. Experience reading about excursions to farm and store. 2. Oral conversation. 3. Poetry, stories, games. 4. Chart reading of child's original stories. 5. Free painting to illustrate stories.	1. Identifi to 25 2. Making cents 3. Weight one-h 4. Liquid Quar 5. Counti Doze doze 6. Contin ing. 7. Contin meti
a) Meat market. b) Fruit ship. c) Sugar factory. d) Bottling plant.	1. Organized plan for permanent project on: Store, garden, farm. 2. Buying and selling as actual activity. 3. Conditions necessary to produce food. 4. Classes and names of food. 5. Cooking of foods.	1. Enrichment of experience through excursions. 2. Continued oral discussion and chart reading. 3. Picture books of food (labels). 4. Printed directions for project activity. 5. Labels for articles in store and farm. 6. Illustration of stories. 7. Visual education slides of meat, bread, milk. 8. Introduction to simple stories of foods in books. 9. Signs on can.	1. Activit sellin 2. Concre illust tal p (*a*) (*b*) (*c*) (*d*) 3. Measur 4. Making 5. Simple 6. Lunchr 7. Food p

g activities	Arithmetical situations	Spelling needs	Nature study and scien
7	8	9	10
in nature.) ntation of food cts seen at —modeling, ng (size, , and color). and games. pment of vo- ary through onversation. cation by name lassification of as fruit. ic play: Par- nd home situa- ections.	1. Buying articles of food at store. 2. Counting objects. 3. Liquid measure: Glass, pint, quart (milk). 4. Building of arithmetical language: Near, far; heavy, light; some, many, few; hard, soft; round, long, short. 5. Play with pound and half-pound weighted bean bags. 6. Sense of balance: Use of balance bar, scales.	None.	1. Informal acqua ance with grow things in envi ment: (a) Helping t ter plan (b) Helping weed den, et 2. Informal experi with elements talked about daily living: S clouds, rain, s bugs, pets. 3. Identification of f
nce reading excursions to and store. versation. stories, games. reading of s original s. inting to illus- stories.	1. Identification of coins to 25 cents. 2. Making change to 10 cents. 3. Weights: Pound and one-half pound. 4. Liquid measure: Quart and pint. 5. Counting measure: Dozen and one-half dozen. 6. Continuation of counting. 7. Continuation of arithmetical language.	None.	1. Discussion of how ments make grow. 2. Classroom garden. 3. Picnics: Outdoor c ing; building fire
ent of exper- through excur- ed oral discus- nd chart read- books of food e). directions for t activity. for articles in nd farm. ion of stories. ducation slides t, bread, milk. ction to simple of foods in can.	1. Activity of buying and selling. 2. Concrete problems to illustrate fundamental process of: (a) Addition to 20. (b) Subtraction to 20. (c) Multiplication to 20. (d) Division to 10. 3. Measures of length. 4. Making change for $1. 5. Simple grocery lists. 6. Lunchroom prices. 7. Food prices in store.	penny, dime, nickel, quarter, dollar, sell, buy, store, farm, market, cow, horse, pig, chicken, eggs, flour, butter, meat, milk, cream, car, milkman, food, vegetable, potato, carrots, pound, quart, pint, peas, beans, onions, orange, banana, cake, bread, cookie, garden, plant, farmer, cut, went, apple, water, ground, April, sun, money, cabbage, grocery, wagon, truck, pull, out, near, under, blow, rain, (1 to 10)	1. Classification of fo 2. Types of cooking values. 3. Use of oven therm eter. 4. Lighting and use gas, kerosene, wood stoves. 5. Evaporation of w in vegetable coo

ience	Health	Manual experiences	Physical activities and recreation—not necessarily related
	11	12	13
quaint- growing nviron- gtowa- lants. ng to d gar- etc. erience nts as ut in Stars, snow, f food.	1. Establishment of habits of cleanliness by practice. 2. Handling of food utensils. 3. Slow eating with correct mastication. 4. Washing foods: Fruits. 5. Establishment of regular eating habits—no eating between meals. 6. Brushing teeth after meals. 7. Establishment of correct habits of elimination.	1. Free play with large saw, hammer, nails. 2. Crude toys needed in own play.	1. Individual play to promote acquaintance with environment; exploration. 2. Toys: Wagon, ladders, apparatus. 3. Sand play. 4. Large blocks. 5. Free rhythmic response to music. 6. Rest periods.
ow ele- food len. r cook- fires.	1. Continuation of habit establishment. 2. Cleanliness of dishes. 3. Attractiveness of served food. 4. Scrubbing of food before cooking. 5. Care of burns and cuts obtained in kitchen. 6. Correct posture at table.	1. Making: (*a*) Large boxes for vegetable bin. (*b*) Holders. (*c*) Mats for table. (*d*) Garden markers. 2. Activity in cooking and washing dishes. 3. Painting stimulated by trips.	1. Singing and simple circle games. 2. Free rhythms. 3. Dramatic play: House trains. 4. Block play developed in groups. 5. Active games of simple type. 6. Story playing. 7. Sensory games. 8. Relaxation.
f foods. ng and rmom- use of e, and water ooking.	1. Habits raised to level of *why* they are done. 2. Simple explanation of how food is chosen: body-building foods, bone-building foods, roughage, heat foods.	1. Making: (*a*) Shelves for kitchen. (*b*) Baskets to use in shopping. (*c*) Benches for seats. 2. Painting tables and chairs. 3. Sewing: napkins, table covers, towels, etc.	1. Group games. 2. Pattern rhythm in folk dance types. 3. Apparatus play. 4. Dramatics. 5. Parties. 6. Relaxation.

6 to 12	6 to 9	1. Primary or intermediate characteristics. 2. Desire for companionship in play. 3. Purposeful activity in that the product satisfies own desires. 4. Beginning of formation of small groups.	1. Setting tables. 2. Pouring milk, cutting bread and butter for tables. 3. Making bread and muffins. 4. Making butter. 5. Cooking simple desserts. 6. Clearing tables and stacking dishes.	1. To 2. Fi
13 to 16	Below 9	1. Adolescent characteristics. 2. Ability to combine in small groups for group work. 3. Use of tools of learning to facilitate activity. 4. Completion of work for use. 5. Response to repetition and drill.	1. Buying food. 2. Preparation of vegetables. 3. Assistance in cooking. 4. Washing and care of dishes.	To: (a) (b) (c) (d)
13 to 16	9 or above	1. Adolescent characteristics. 2. Group control with recognized leaders. 3. Acceptance of routine. 4. Increased responsibility for conduct and tasks. 5. Initiative in setting own tasks. 6. More effective utilization of practice. 7. Development of motor control. 8. Wider social interests.	1. Telephone ordering. 2. Planning menus. 3. Budgeting. 4. Paying bills. 5. Daily serving of food. 6. Preservation of food—refrigeration. 7. Canning. 8. Cooking for parties. 9. Supervision of garbage disposal.	1. In 2. Tr 3. In 4. Bu

		5. Oral directions.	scale
To— (*a*) Stores. (*b*) Warehouse where food comes in. (*c*) Vegetable and fish markets. (*d*) Dairy plant. (*e*) Bakery. (*f*) Freight cars, refrigeration cars. (*g*) Farm. Fishing trip.	1. Experiences on play level: (*a*) Growing of food on farm. (*b*) Selling of food at market. 2. Kinds of food. 3. Uses of food.	1. Experience reading about excursions to farm and store. 2. Oral conversation. 3. Poetry, stories, games. 4. Chart reading of child's original stories. 5. Free painting to illustrate stories.	1. Identif to 2 2. Makin cent 3. Weigh one- 4. Liquid Qua 5. Count Doz doze 6. Contin ing. 7. Contin met
(*a*) Meat market. (*b*) Fruit ship. (*c*) Sugar factory. (*d*) Bottling plant.	1. Organized plan for permanent project on: Store, garden, farm. 2. Buying and selling as actual activity. 3. Conditions necessary to produce food. 4. Classes and names of food. 5. Cooking of foods.	1. Enrichment of experience through excursions. 2. Continued oral discussion and chart reading. 3. Picture books of food (labels). 4. Printed directions for project activity. 5. Labels for articles in store and farm. 6. Illustration of stories. 7. Visual education slides of meat, bread, milk. 8. Introduction to simple stories of foods in books. 9. Signs on can.	1. Activit selli 2. Concr illus tal (*a*) (*b*) (*c*) (*d*) 3. Meas 4. Maki 5. Simpl 6. Lunch 7. Food
Inspection of hotel or cafeteria kitchen. Trip to cold-storage plant. Inspection of community garbage disposal. Buying trips in community designed to compare values offered.	1. Sources of food: (*a*) Market. (*b*) Farmer. (*c*) Wheat farmer. (*d*) Flour mill. (*e*) Sugar farmer. (*f*) Meat farmer. (*g*) Fruit farmer. 2. Seasonings and beverages. 3. Manufacture of food: (*a*) Meaning of manufacturing. (*b*) Canning of foods. 4. Health in relation to food. 5. Preparation of foods in home.	1. Informational reading of reference for social science. 2. Newspaper advertisements. 3. Recreational reading. 4. Notebook. 5. Stories of excursions.	1. Auto nu th 2. Mar 3. Budg 4. Fami 5. Sizes ca

reading ursions to tore. tion. s, games. ing of iginal to illus- s.	scales. 1. Identification of coins to 25 cents. 2. Making change to 10 cents. 3. Weights: Pound and one-half pound. 4. Liquid measure: Quart and pint. 5. Counting measure: Dozen and one-half dozen. 6. Continuation of counting. 7. Continuation of arithmetical language.	None.	1. Discussion of how elements make food grow. 2. Classroom garden. 3. Picnics: Outdoor cooking; building fires.
f exper- h excur- l discus- rt read- of food ions for ity. icles in m. stories. n slides d, milk. simple oods in	1. Activity of buying and selling. 2. Concrete problems to illustrate fundamental process of: (*a*) Addition to 20. (*b*) Subtraction to 20. (*c*) Multiplication to 20. (*d*) Division to 10. 3. Measures of length. 4. Making change for $1. 5. Simple grocery lists. 6. Lunchroom prices. 7. Food prices in store.	penny, dime, nickel, quarter, dollar, sell, buy, store, farm, market, cow, horse, pig, chicken, eggs, flour, butter, meat, milk, cream, car, milkman, food, vegetable, potato, carrots, pound, quart, pint, peas, beans, onions, orange, banana, cake, bread, cookie, garden, plant, farmer, cut, pull, went, out, apple, near, water, under, ground, April, blow, sun, rain, money, (1 to 10), cabbage, grocery, wagon, truck	1. Classification of foods. 2. Types of cooking and values. 3. Use of oven thermometer. 4. Lighting and use of gas, kerosene, and wood stoves. 5. Evaporation of water in vegetable cooking.
reading or social vertise- ading. sions.	1. Automatization of number facts through drill. 2. Marketing. 3. Budgeting for foods. 4. Family grocery bills. 5. Sizes and numbers of canned goods.	List in level 3, above; additional words used in notebook work; also: manufacture, factory, can, condensed, cheese, ice cream, cereal, breakfast, food, wheat, rye, salmon, sardines, fish, beets, pickels, peaches, spinach, soup, jam, jelly, corn, pears, pineapple, sugar	1. Preservation of foods: cold, heat. 2. Effect of soda on sour milk; effect of yeast on bread, etc. 3. Opening bottles under running hot water. 4. Action of cleaning agents. 5. Purification of water. 6. Pasteurization of milk. 7. Fire extinguishing methods.

1. Continuation of habit establishment. 2. Cleanliness of dishes. 3. Attractiveness of served food. 4. Scrubbing of food before cooking. 5. Care of burns and cuts obtained in kitchen. 6. Correct posture at table.	1. Making: (*a*) Large boxes for vegetable bin. (*b*) Holders. (*c*) Mats for table. (*d*) Garden markers. 2. Activity in cooking and washing dishes. 3. Painting stimulated by trips.	1. Singing and simple circle games. 2. Free rhythms. 3. Dramatic play: House, trains. 4. Block play developed in groups. 5. Active games of simple type. 6. Story playing. 7. Sensory games. 8. Relaxation.
1. Habits raised to level of *why* they are done. 2. Simple explanation of how food is chosen: body-building foods, bone-building foods, roughage, heat foods.	1. Making: (*a*) Shelves for kitchen. (*b*) Baskets to use in shopping. (*c*) Benches for seats. 2. Painting tables and chairs. 3. Sewing: napkins, table covers, towels, etc.	1. Group games. 2. Pattern rhythm in folk dance types. 3. Apparatus play. 4. Dramatics. 5. Parties. 6. Relaxation.
1. Preservation of foods from harmful bacteria. 2. Buying unadulterated foods. 3. Healthful methods of cooking vegetables. 4. Pasteurization of milk. 5. Milk delivery and contagious diseases. 6. Disease and sterilization of food. 7. Preparation of balanced menus. 8. Preparation of food for babies and small children.	1. Carving of fruit bowls. 2. Repair of toasters. 3. Replacing fuses. 4. Replacing water faucets. 5. Tin work: cookie cutter. 6. Making tables. 7. Caning chairs. 8. Advanced sewing.	1. Social games of more sedentary type. 2. Parties. 3. Social dancing. 4. Clubs. 5. Hobbies. 6. Trips. 7. Dramatics. 8. Relaxation.

gives an idea of how a unit of experience on foods can be adapted to any one or more of the groups included.

Unit on child care.—In somewhat different form is given the description of part of a unit on child care, as adapted from the report of several teachers who worked together for the instruction of a group of adolescent girls, ranging in chronological age from 14 to 16 years, and in mental age from about 8 to 10 years. The objective of the unit was to prepare the girls for better service when caring for children either in their own homes or as a means of earning a livelihood. It was divided into three parts, as follows: (1) Entertainment of the child from 1 to 6; (2) Food for the preschool child; (3) Care and hygiene of the preschool child. The content of the first of these is briefly outlined below.[1]

Entertainment of the child from 1 to 6

A. Story telling:
   1. Selection of material:
      a. Class discussion of types of material suitable for young children: Nursery rhymes, animal stories, fairy stories.
      b. Illustrations of various types of stories, as told by teacher.
      c. Search for material by girls in library and at home.
      d. Listing of stories for future reference.
   2. Learning to tell stories:
      a. Development in class of outline for story: Introduction, events, conclusion.
      b. Discussion of outlines as made by individual girls.
      c. Writing in detail the stories to be told.
      d. Practice in telling stories in class.
   3. Telling stories to:
      a. Preprimary children in the same school.
      b. Brothers and sisters at home.
      c. Children at baby party.

B. Games:
   1. Discussion of various types of play activity and games; their relation to health and recreation.
   2. Observation of and report on children at play in kindergarten, in nursery school, on playground, at home.
   3. Construction of cut-out puzzles, toys, and scrapbooks for use of children.

[1] For details of this and other units of experience, see Office of Education bulletin, 1933, no. 7, "Group Activities for Mentally Retarded Children."

4. Practice in playing with the children at school and at home, with reports and discussion of progress.

C. Planning and conducting a baby party for 20 children under 6 years of age, with entertainment through games, toys, and stories, and with refreshments made and served by the girls.

The place of reading, language, and spelling in a unit of this kind is evident. Stories were read, written, and told. Reports were made on observations and work done. Lists of stories, games, and other types of entertainment were kept. Health and physical education entered the picture in the choice of recreational activities, and even more so in the other two parts of the unit not described here, dealing with food and child hygiene. Art, music, and hand work were used in the preparation of material. The plans for the baby party and the budgeting of expenses met in other parts of the unit necessitated the use of numbers. Social concepts were of course emphasized throughout. The entire unit was an excellent example of how many of the vitally functioning elements of real education can be coordinated on the basis of an experience of immense practical value and interest to adolescent girls.

TIME ALLOTMENTS AND DAILY SCHEDULES

The daily division of time among the several activities included in a unit of work may seem to some a difficult problem. Obviously, if the experience is functioning socially in a vital way, tight compartments cannot be assigned to subjects as such. Nor can any division of time be suggested that will fit all situations at all periods of the year. This does not mean that the amount of time given to a particular activity may be left to take care of itself, determined only by the inspiration or fancy of the hour. Careful judgment must be exercised, based on purposeful planning in the light of the children's needs and the content of the unit of experience under way.

In general, it seems safe to say that a carefully planned schedule for children of primary and intermediate ages will show approximately one half of the day (or of the week) used for the teaching of various skills (both academic and manual) needed in the unit of experience, and the other half for the pursuit of socializing group activities which are in-

volved in the unit and which give opportunities for the application of learned skills. Needed variation made for adolescents will be in the direction of increasing manual and group work of a socializing type and minimizing the time spent on academic drill. In order to keep the division of time flexible, many class programs are made on a weekly rather than a daily basis. This insures a certain amount of freedom from day to day and yet furnishes a definite standard of procedure.

The following are specific suggestions relative to the daily program, as given by the State Department of Public Instruction to teachers of special classes for retarded children in Pennsylvania:[2]

In the organization and administration of an effective daily program for the orthogenic backward, the incorporation of the following practices will lessen learning difficulties and provide, as nearly as possible, an optimum educational opportunity for each pupil:

1. The unification or correlation of all instruction insofar as feasible and practical in the development of projects or integrated units of study, directly related to the daily social experiences of the pupils.
2. The apportionment of relatively long periods or blocks of time to related subject materials and activities, resulting in economy of time and more effective teaching.
3. The sectioning of the class into groups of approximate achievement levels for daily instruction in oral and written expression, spelling, and number tests.
4. The teaching of the class as a unit in other literary subjects, the necessary adaptations being made by the teacher to compensate for individual differences.
5. The profitable occupation of each pupil with correlated seatwork or manual activities throughout the day when working independently.
6. The use of the most effective learning periods of the day for the most difficult subjects.
7. The arrangement of subjects so that a difficult subject will be followed by a relatively easy one.
8. Limiting academic instruction to brief teaching periods.
9. Providing short relief periods between academic teaching periods.

[2] Pennsylvania. Organization and Administration of Special Education Classes for the Orthogenic Backward, Harrisburg, Pa., State Department of Public Instruction. Bulletin 85, 1935, pp. 32–33.

SUMMARY

1. The only adequate basis for realizing the objectives set forth for the education of mentally retarded children is a curriculum planned in terms of the day-by-day experiences of the child in life situations.

2. The "unit of experience" provides the means for integrating classroom work with real life. It provides also the means for giving vital meaning to the use of academic skills within the ability of the child.

3. Units of experience should be adapted to the characteristics of the community in which the children live as well as to the age and ability levels of the children for whom they are planned.

4. Units of experience dealing with home and community life afford rich opportunity in every community for the development of habits, attitudes, and skills essential to successful living for mentally retarded children.

5. The division of time among the various activities of the day or week must be kept flexible and yet meet the conditions of careful planning in the light of the children's needs.

SUGGESTIONS FOR READING

CALIFORNIA. CURRICULUM COMMISSION. Teachers guide to child development. Sacramento, Calif., California state printing office, 1930. 658 p.

Published in abbreviated form by Government printing office, Washington, D. C., as Office of education bulletin, 1930, no. 26.

A manual for kindergarten and primary teachers, giving the essentials of an activity program and descriptions of numerous activities developed in the schools of California. Suggestions for planning and evaluating similar activities are included. Illustrated. Bibliography for teachers and for children.

CLOUSER, LUCY W., ROBINSON, WILMA J., and NELLY, DENA L. Educative experiences through activity units. New York, Lyons and Carnahan, 1932. 352 p.

A "record of some of the activities carried on during 1 year in two rooms of the Kansas City public schools." Describes specific activity units and furnishes abundant bibliographical material on the subjects represented.

GUSTIN, MARGARET, *and* HAYES, MARGARET L. Activities in the public school. Chapel Hill, N. C., University of North Carolina press, 1934. 290 p.

A compilation of units of activity for various grade levels, with descriptions of classroom experiences and bibliographical material to be used with each one. Illustrated. Bibliography.

INGRAM, CHRISTINE P. (See chapter 2.)

MINNEAPOLIS, MINNESOTA. Minneapolis public schools, Curriculum committee. Course of study in special education for retarded children. Minneapolis, Public schools, 1933. 262 p.

An outline of curriculum activities developed by the special-class teachers of the Minnesota public schools under the supervision of the Director of special education. Based on the principle of integration of classroom experiences, with emphasis upon their meaning in the daily lives of the children.

PRATT, CAROLINE. Experimental practice in the city and country day school. New York, E. P. Dutton and company, 1924. 302 p.

An organized record of the activities of a progressive school in developing its program about the experiences of the children and on the basis of their interests and abilities, looking toward their orientation in and contribution to a social world. Lists materials used in the classroom.

UNITED STATES. OFFICE OF EDUCATION. Group activities for mentally retarded children. Washington, Government printing office, 1933. 146 p. (Bulletin, 1933, no. 7.)

A compilation of activity units and projects contributed by successful teachers of special classes in various parts of the country. The activities described represent various fields, including the home and the community, social science, nature study, music, and literature.

CHAPTER 5: PHYSICAL AND MENTAL HEALTH

MORE AND MORE are physical health and mental health coming to be considered not as distinct entities but as two different phases of the same general problem. Narrowly conceived, physical health relates to bodily or organic condition, while mental health refers to emotional response, mental attitudes, and social reactions. In the treatment of children's behavior problems these two cannot be separated, for each is reflected in the other. In the diagnosis of adult ills, also, they are found to be closely inter-related. Hence it seems fitting that any discussion of their significance in the lives of mentally retarded children should recognize this fact of intimate relationship. Each represents one aspect of the total health situation in which the individual finds himself. As they are further discussed in this chapter, the reader should constantly keep in mind the influence that each exerts upon the other.

PHYSICAL HEALTH

The maintenance of good bodily health is a major goal for every child. To help him to achieve this aim is the responsibility of the school through its program of health education. In such a program both specific instruction and the encouragement of good habits are essential. Mere talking about health does not suffice. All children must have daily practical experiences in the care of the body that will serve to inculcate proper health habits and attitudes. If this is true of the average child, it is of much greater importance for the seriously retarded, who does not grasp abstract principles readily nor see the relation between the act and its consequences, either for good or bad.

Content of health education.—There is no reason why the general content of health education should be different for retarded children than for the intellectually normal.

Good health is the aim for all. The difference lies rather in the insistent emphasis upon simplification of health principles and their application in keeping with the limited intellectual ability of retarded children. For the young child primary emphasis should be placed upon establishing simple habits of personal hygiene, bodily coordination, and protection against accident and disease. As the child grows older, he should be assisted in making applications of health principles in home and community situations, as well as in the maintenance and the further development of his own physical efficiency.

In "Education of the Slow-Learning Child", Christine Ingram summarizes the health habits and attitudes that should be taught as follows:[1]

> The slow-learning child should learn to practice personal habits of cleanliness, of good posture, and of healthful dress—habits that experience has shown are also directly related to the development of self-respect. The child should be taught to care for his eyes, ears, and throat; to appreciate the value of well-ventilated and well-lighted rooms, of exercise in the open, and of regularity in exercise and rest; to choose and prepare healthful foods; and to observe safety rules.
>
> Habits and attitudes of hygienic living that will aid in the maintenance and promotion of the health of others are also necessary. The child should be guided to consider the effect of his health habits on the health and comfort of those around him as well as their effect on himself. He should learn about communicable diseases and how to use community health facilities and to administer some of the steps in first aid.

Coordinated activities.—Such health experiences as are referred to by Ingram can become an integral part of many units of experience that superficially may seem unrelated to the subject. A unit on shelter, for example, provides opportunities for emphasis upon proper lighting, adequate ventilation, the use of bath tubs and wash basins (much needed in some communities), and myriad other items of importance to health. Similarly, a unit of experience on clothing gives rise to abundant possibilities for teaching healthful dress and cleanliness. The health implications of a unit on foods are recognized perhaps most readily of

[1] Ingram, Christine. Education of the Slow-Learning Child. Yonkers-on-Hudson, New York, World book company, 1935. p. 64.

all, for this opens up all the avenues of approach to teaching nutritive values, the need of balanced meals, care and cleanliness in preparing and preserving food, eating habits, and the essentials of dietary knowledge. Health and science can be coordinated in the study of water, drainage, and communicable disease.[2] Health and the arts can be coordinated through rhythmical activities that emphasize good posture, proper exercise, and muscular coordination.[3] Social studies bring into the picture community facilities for healthful living, healthful working habits, and safety regulations.[4] There is not a field of the curriculum that does not offer an opportunity for stressing some aspects of health education.

The teacher's responsibility.—There are certain elements of a health-education program which, if met at all, must be met by the teacher's personal attention, first, to classroom conditions, and, second, to individual children. Temperature, ventilation, lighting, and desk adjustment are among the problems that demand daily consideration. Unless the child works under healthful conditions he cannot be expected to maintain either physical or mental health. Moreover, careful observation and periodic check of each child's physical status are essential to his well-being, especially if he comes from a home in which healthful living conditions are lacking. The daily wash and daily use of a tooth brush, the periodic bath, even the laundering of clothes are frequently responsibilities which the school must meet. Sensory handicaps, malnutrition, nasal obstructions, and other physical impairments would for some children never be discovered unless the school undertook to do so. To give the personal attention demanded by each child in the light of his physical condition and environment is as much a part of the health-education program as the teaching of proper breathing. Constant vigilance on the part of the teacher is necessary if he would remove unnecessary hindrances to the child's use of all the ability which he possesses.

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[2] See also chapter 8, on "Experiences in Science."
[3] See also chapter 9, on "Experiences in the Arts."
[4] See also chapter 6, on "Social Experiences."

Source material.—Any good text in health education will yield an abundance of suggestive material which the teacher can use and adapt to the needs of his group. Consideration of the topic in these pages is brief, not because experiences in health and physical development are lacking in importance, but because the teacher is urged to look upon the problem as one that is common to all children and to utilize to the maximum the excellent guides that have been developed for all.[5]

MENTAL HEALTH

Physical well-being contributes substantially to mental health. Important as the former is, the latter is even more essential for the welfare of any person. It connotes an inner personal adjustment, an emotional stability, an ability to get along with other people. It presupposes happiness in living and a sense of some—even though limited—accomplishment.

Application to retarded children.—The mentally retarded pupil has a serious handicap. Any child with a handicap is at a disadvantage when he competes with other children not so handicapped. It is but logical that unhappiness, emotional conflict, and emotional strain are likely to result in his life. If, therefore, the retarded pupil is to be reasonably happy, he must have guidance and supervision that will help him to face his handicap squarely and to find the avenues in life through which he can give acceptable service. This guidance must begin early in life, since social maladjustment is likely to have its beginning in childhood. If habits of disappointment and inferiority are allowed to persist for several months or even years, they become so deeply fixed in the personality of the child that it is difficult to change them. Sometimes it is impossible for any complete correction to be made. The child's handicap should therefore be discovered early. The development of satisfactory habits must be encouraged and unsatisfactory ones prevented. Necessary allowance should be made for the handicap. Careful supervision and training should

[5] See "Suggestions for reading" at the end of this chapter.

keep the child and those about him from expecting the impossible.

One of the dangers often encountered in the life of the high-grade mental defective is that too much is expected of him. He may appear to be normal. He may act normally in most situations. The majority of people who meet him are likely to think of him as normal. As a result, he is frequently directed to tasks that he is unable to perform. He fails, with disastrous results to himself and to others. One who understands his weaknesses would never have assigned such tasks to him.

Yet, while making allowance for the child's handicap, the teacher should at the same time make the greatest possible use of those powers which he does possess. He usually has several personal characteristics that approach the normal. He may have a good body, good eyes, good ears, reasonable control of his muscles. These better qualities should be discovered and used to their maximum. No fixed rules can be given for the education of a mentally retarded child from this standpoint. The happiness and success of any person depend upon many adjustable elements. For example, a person of low mental capacity would ordinarily find greater difficulty in a complex city environment, where social and industrial competition is keen, than in a quiet, rural community. Likewise, the competition in a large class of 40 or 50 pupils is almost sure to be disastrous to him, while membership in a small group in which special consideration can be given to his needs will increase several hundredfold his chances for success. But "success" must always be defined in terms of the ability with which one has to work. What is outstanding success for 14-year-old Jimmie with an intelligence quotient of 60 should be deemed a failure for 10-year-old John with an intelligence quotient of 125. To be able to understand the meaning of "success" and "failure" for each pupil is one of the essential qualifications of a teacher who would apply the principles of mental hygiene to his teaching.

Problems of parents and teachers.—It is equally important to realize that parents and teachers are frequently in need of the services of mental hygiene as much as or even

more than the child. It should be clearly understood that the difficulty which confronts many a child has its origin in the maladjusted life of the parent or other adult who is in the position of directing him. When the proper solution in the life of the adult has been found, the child's problem often disappears. For this reason mental hygiene for children who have problems must in large measure be directed at the teachers and parents of those children. The dictatorial, restless, antagonistic, moody teacher or parent is showing signs of mental trouble himself. Such an adult cannot expect to be successful in helping to solve the emotional maladjustments of children. He should realize that he must try to put into his own life the same characteristics which he seeks in the life of the child, namely, courage, a reasonable degree of independence, calmness, cheerfulness, friendliness. He should make his own life as free as possible from unnecessary hurry and worry and high pressure, finding happiness in the development of wholesome interests and activities that bring a feeling of success and "worthwhileness."

Mental health the essence of the entire curriculum.—The concept of mental health should permeate the whole curriculum. Needless to say it is not possible to set apart a half hour each day for instruction of this kind. Mental health begins with the teacher's understanding of the child's need; it finds expression in every activity of the day in which the child is helped to live socially with other people and to contribute his bit to the total welfare. Every unit of experience gives opportunity for demonstration of habits of cooperation, thoughtfulness, honesty, and other socially desirable traits. The time to impress them is not after school when some child has been detained for infringement of the rules, but in the actual work and play and discussion that take place in the course of the day. Situations as they arise constitute the subject matter of instruction. The teacher who would use the principles of mental hygiene must be quick to see and to use the opportunities growing out of the homely happenings of the day. He must be able, too, to plan a program of work that will make maximum provision for the development of situations in which mental hygiene

and character education will function. Some specific examples of how this can be brought about through the unit of experience are given in the following chapters.

SUMMARY

1. Physical and mental health are the foundation stone upon which happiness and efficiency are built. Hence health education, including both physical and mental hygiene, is basic to all curricular activities.

2. The content of health education is the same for retarded children as for intellectually normal children, with recognition of the need for simplifying instructional methods in keeping with the limitations of the child.

3. Every unit of experience involves aspects of work which can be utilized for the development of physical and mental health, life situations and experiences furnishing the material for impressing the lessons needed.

4. Each child should be studied, his strengths and weaknesses evaluated, and tasks fitted to his nature and his needs as long as he remains under educational direction.

5. Teachers and parents are sometimes quite as much in need of help in mental hygiene as are children, particularly if their own lives are seriously maladjusted. The social maladjustment of children is frequently caused or at least enhanced by the personal maladjustment of adults who deal with them.

SUGGESTIONS FOR READING

Physical Health

ANDRESS, JAMES M., ALDINGER, A. K., *and* GOLDBERGER, J. H. Health essentials. Boston, Ginn and company, 1928. 481 p.

A textbook written for high schools, but an excellent source of information for the teacher who wishes to adapt the material to the needs of special classes.

BAUER, W. W. Contagious diseases, what they are and how to deal with them. New York, Alfred A. Knopf, 1934. 218 p.

A book written to meet the practical needs of mothers in protecting their children against communicable diseases. Teachers will find many suggestions of value for application in the school.

CHARTERS, W. W., SMILEY, DEAN F., *and* STRANG, RUTH M. Health and growth series. New York, Macmillan company, 1935. Illustrated.

Six books, as follows: Good habits, 185 p.; Living healthfully, 184 p.; Wise health choices, 211 p.; Health problems, 229 p.; Adventures in health, 225 p.; Health knowledge, 254 p.

Also published in three volumes as follows: Keeping healthy; The body's needs; Health through science. Intended for children's use.

ROSE, MARY SWARTZ. Feeding the family. New York, Macmillan company, 1924. 487 p.

A source book of information for the teacher who would bring into the classroom experiences the application of health knowledge as applied to food.

Mental Health

IRWIN, ELIZABETH A., *and* MARKS, LOUIS A. Fitting the school to the child. New York, Macmillan company, 1924. 339 p.

Gives an account of the results of classifying the pupils of a large elementary school by means of intelligence tests and of methods used in diagnosing and treating children's difficulties. Emphasizes the need of adapting school work to the capacities of children in order to preserve mental health and develop wholesome personality.

MORGAN, JOHN J. B. Psychology of the unadjusted school child. New York, Macmillan company, 1936. 346 p. (Revised edition.)

A very readable discussion of the difficulties of school children from the standpoint of behavior and personality, and of the possibilities within reach of the teacher in helping to remove such difficulties.

MYERS, GARRY CLEVELAND. Developing personality in the child at school. New York, Greenberg, Inc., 1931. 375 p.

Written for teachers, with consideration of the many aspects of the problem that apply to children's behavior and the maintenance or development of mental health.

SYMONDS, PERCIVAL M. Mental hygiene of the school child. New York, Macmillan company, 1934. 321 p.

One of the more recent texts in mental hygiene, written primarily for teachers, with emphasis upon the positive, preventive aspects of the subject. Bibliography.

NOTE.—See also books of comprehensive scope listed in chapters 2 and 3.

CHAPTER 6: SOCIAL EXPERIENCES

TO LIVE happily a man must be able to get along with his fellows, respect the rights of others, recognize the value of cooperation, desire to earn an honest living, and respect the laws of the country in which he lives. The highest type of behavior along these lines can be obtained only through constant practice in the early years. If there is sufficient repetition of a specific situation, a habit of behavior is formed. A habit once formed is not easily broken. The school must accept its responsibility along with the home and the church in helping to develop socially acceptable habits. Hence, social experiences must play a vital part in the life of the school. In fact they should form the basis of the entire curriculum.

WHAT SOCIAL EXPERIENCES SHALL BE USED?

What are those social experiences which are most conducive to the development of a socially accepted and respected personality? No attempt will be made to cover the entire realm of life experiences that would be included in this category. A few suggestions, however, taken from actual experience in the classroom will indicate the basis of selection.

The home.—Previous to the child's entering school, he has been associated mostly with members of his own family. The relationships, duties, responsibilities, and attitudes commonly found in the home may well be the point of departure which the teacher uses to aid in the adjustment of the child to the new situations in which he finds himself in the school. The teacher should so far as possible make contacts with the homes represented in his class, learn of each child's environment, and obtain the cooperation of the home in bringing about needed improvement of attitudes and relationships.

In chapter 4 two units relating to home life were described which offered material for social activities. Other suggestions for socializing experiences based on the home are given in the outline on page 50. These are illustrative of the wealth of opportunity that lies in this field to develop a comprehensive unit in accordance with the ages and abilities of the pupils concerned.

The school and the community.—Next to the home in the experience of the child comes the school, and after the school comes the community. Curriculum makers should draw freely upon each of these fields in the development of units of experience that will place the child in social situations of vital importance to his growth as a social being. Suggestions taken from school life and from community life are included in the outline on page 50. Needless to say, each of these will function best if it is made a part of a larger situation or experience in which the children are actively participating. Almost any one of them can be made the background for effective training in social habits and attitudes. For example, if a trip to a farm or factory is in prospect, an informal discussion can be developed in which the children themselves will set the standards for their personal appearance and conduct; and when they have returned, another informal discussion can be used as a basis for checking their achievements in these directions as well as for considering the content of their observations.

For boys and girls who are about ready to leave school and to take their places in the working world, it is essential that the employment opportunities of the community be investigated. This is a social experience of intense practical value. A list of possibilities can be made out in class through group participation, visits made to some of the plants under consideration, and requirements, advantages, and hazards of respective jobs analyzed. The boys and girls who go out from the school having some familiarity with the types of jobs that they can probably fill with reasonable satisfaction have taken a big step toward getting one of those jobs. Certainly the school should do as much as possible in laying the foundation for this very important phase of the young man's or young woman's life.

The Nation and the world.—Beyond the immediate community there are the State, the Nation, and the world. Because a child is mentally retarded is no reason why he should be deprived of the socializing influences of learning a few things about the geography of his country and of the world; something, too, of the life of other people and of other times; of the history of his own people, centered about the service of a few truly great men and women of the past, and, for the older pupils, about the most obvious current social and economic issues.

The purpose of using such content with the retarded child, however, is not to instill mere factual knowledge of places and events, but rather to increase his understanding of life and his consciousness of world citizenship, of the brotherhood of man, and of his own place in the scheme of things. Academic facts of history and geography and government are not essential to his happiness, nor do they of themselves contribute to any of the objectives set up for the education of retarded children. They should be used only as incidental concrete means to the building up of ideals and attitudes.

Most if not all of the content suitable for use in these fields can be introduced as elements of units of experience in which children are vitally interested. For example, a unit on shelter can with many groups be easily extended to include a consideration of the houses of the Indians and the Eskimos, and of the place of these peoples in our national life. Like normal children, the mentally retarded take delight in dressing up like Indians, in building an Indian wigwam, in learning some of the simpler Indian songs, and in reading or in hearing read the stories of the life of the red man. Particularly in communities which have a past intimately related to the Indians would such activities be appropriate.

In California, a study of the discovery of gold in the days of '49 or of the work of the Spanish mission fathers would have local significance. In New England, the landing of the Pilgrim Fathers and early colonial days would be topics fraught with possibilities of development. But in neither of these sections would a study of the exports of Wales or of the history of French Guiana offer anything

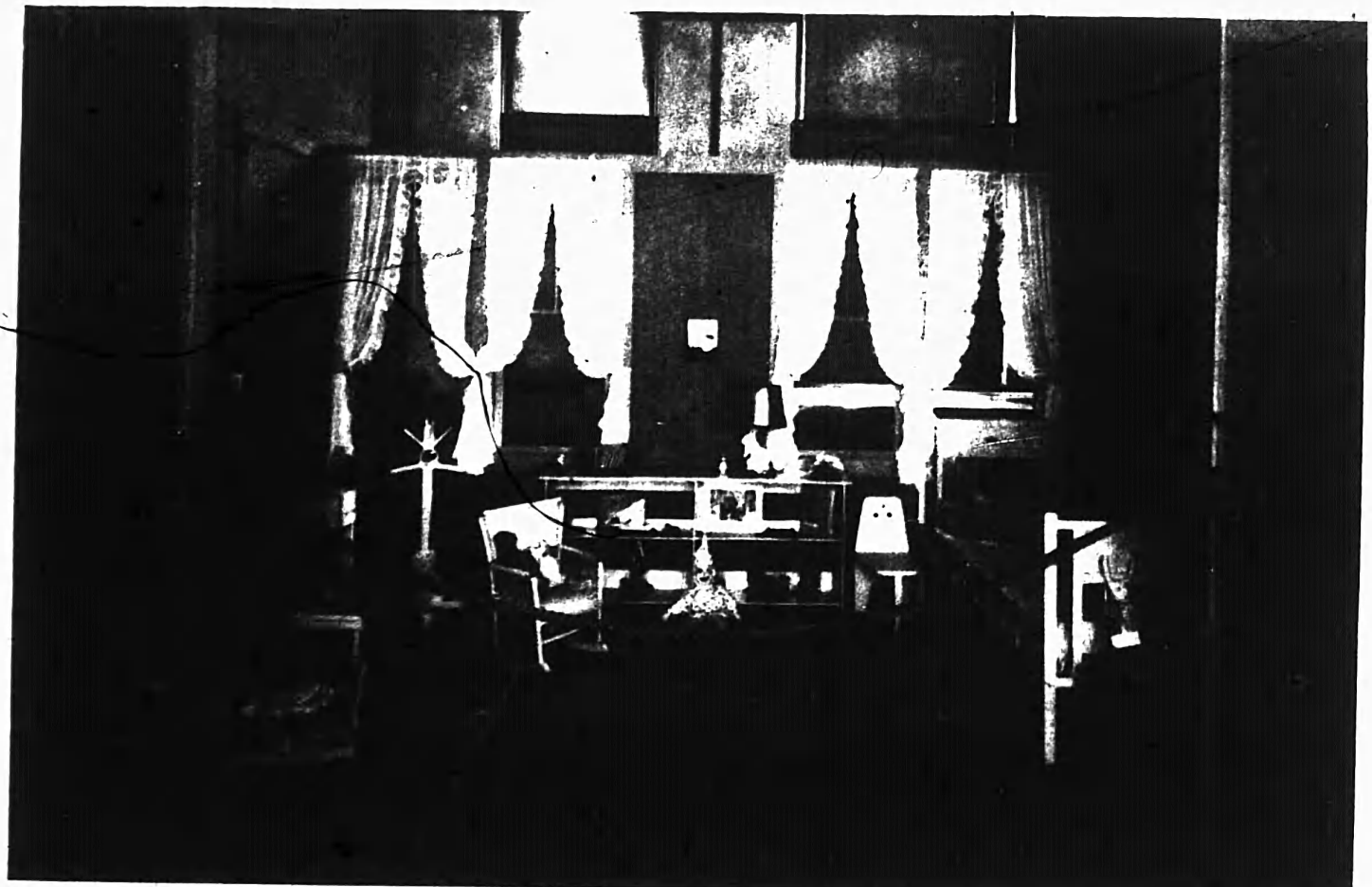
of social value to children whose mental horizon and whose sphere of activity are both seriously limited.

OUTLINE OF SUGGESTED SOCIAL EXPERIENCES TAKEN FROM HOME LIFE, SCHOOL LIFE, AND COMMUNITY LIFE

(To be adapted to needs of age and ability levels)

A. Social experiences in home life.

1. Experiences for all children:
   - (*a*) Prearranged visit to a home near the school, not too far above the level of homes known by the children, but neat and well-kept, to observe items important in homemaking, such as clean floors, neatly made beds, arrangement of furniture, sanitary provisions, care of yard and garden.
   - (*b*) Talks about the visit, the activities, relationships, and responsibilities of the home as experienced by the children.
   - (*c*) Reading of stories portraying home life.
   - (*d*) Making a playhouse, not elaborate but large enough for the children's use.
   - (*e*) Arranging a party, with the children as hosts and hostesses.
   - (*f*) Discussing the arrival of guests in the homes of the children, visits from relatives, grandparents, etc., or the arrival of a new baby in the family.
2. Additional experiences for older girls:
   - (*a*) All homemaking activities such as cooking, sewing, house furnishing, arrangement and decoration, care of clothing, and budgeting expenses.
   - (*b*) Making notebooks illustrating activities listed under (*a*) above.
   - (*c*) Shopping excursions; learning how to select and purchase commodities used in the home.
   - (*d*) Ordering supplies over the telephone.
   - (*e*) Inviting parents to school to see exhibit of handwork or other classroom activities.
   - (*f*) Serving tea. (Older girls should arrange tea table, pour tea, make sandwiches, cookies, etc. They should feel responsibility for engaging their parents in conversation, introducing them to their teacher or to other parents.)
   - (*g*) Care of children. (Real children should be used if possible. Day nurseries may cooperate and permit the class to "adopt" a baby. Reports should be made on care of baby sisters and brothers.)
     - (1) Bathing.
     - (2) Dressing.
     - (3) Feeding.



Courtesy of Minneapolis, Minn., Public Schools.

ANOTHER BEDROOM IN WHICH EVERY ARTICLE WAS MADE BY THE CHILDREN, WITH ABUNDANT OPPORTUNITY FOR COOPERATIVE ACTIVITY.

Courtesy of Manitowoc, Wis., Public Schools.

POST OFFICE ACTIVITIES FURNISH MATERIAL FOR BOTH SOCIAL AND ACADEMIC EXPERIENCES.

(4) Making clothing.
(5) Playing games with young children; entertaining them with songs, stories, poems.
(6) Arranging a children's party.
(7) Helping with the kindergarten group in the school.

3. Additional experiences for older boys:
   (*a*) Constructing play house.
   (*b*) Participating in some of the work of the home, such as picking up clothes, helping mother, shining shoes, running errands, shoveling walks, etc.
   (*c*) Collecting pictures of different types of homes for a booklet.
   (*d*) Collecting figures on cost and maintenance of a home: budgeting expenses.
   (*e*) Participating in school's tea party for parents, especially in the conversation.
   (*f*) Caring for pets.
   (*g*) Working in a garden. (Each boy should have a plot of his own.)

B. Social experiences in school life.
1. Working in groups for a common cause:
   (*a*) Game periods; playground activities.
   (*b*) Group construction work in classroom.
   (*c*) Committee work.
   (*d*) Participation in paper sales.
   (*e*) Spontaneous dramatization of stories or situations depicting the life of various periods, countries, or areas.
   (*f*) Preparation for special holidays or festive occasions.
2. Participation in school civic league meetings or student council; in auditorium programs; in school-safety program.
3. Membership on ball teams.
4. Musical activities; dancing and rhythmic exercises.
5. Sharing responsibility for keeping school building in good condition.
6. Observing school activities in other rooms; making contacts with other class groups whenever the child can compare advantageously. (This will be for children having special ability in some direction, such as music or art.)
7. Assisting in the preparation and serving of lunches. (This provides an unlimited number of practical experiences arising daily.)

C. Social experiences in community life.

1. Listing and discussing persons in community who contribute to our needs:

(*a*) City life—

(1) Milkman.
(2) Butcher.
(3) Grocer.
(4) Baker.
(5) Druggist.
(6) Oil station man.
(7) Postman.
(8) Fireman.
(9) Policeman.
(10) Motorman.
(11) Librarian.
(12) Laundryman.

(*b*) Rural life—

(1) Farmer.
(2) Postman.
(3) Thrasher.
(4) Corn huskers.
(5) Hay balers.
(6) Traveling grocer.
(7) Traveling druggist.
(8) Traveling butcher.
(9) Sales people of various kinds.
(10) Traveling librarian.
(11) Oil station man.

2. Listing and studying local industries or places requiring workers.
3. Making trips:
   (*a*) To various places of business.
   (*b*) To farms, observing farm activities.
   (*c*) To industrial plants.
4. Conversing with people who serve in either urban or rural life.
5. Making contacts with people and agencies who can give information and guidance, such as doctors, nurses, ministers, and social agencies.
6. Locating desirable places for recreation, such as parks, playgrounds, neighborhood houses, best movies, and theaters.
7. Locating public buildings, such as churches, gas company, electric company, city hall, fire department.
8. Writing friendly letters.
9. Writing business letters asking for information or quotations of prices, making appointment for an interview, or engaging a speaker who will speak to the class on some phase of community life.
10. Participating in field-day programs on public playgrounds; making use of public parks, swimming beaches, skating rinks, and other facilities provided for recreational purposes.
11. Engaging in interscholastic meets such as football, baseball, basketball.
12. Investigating employment situation in community; making out application for job; studying Workmen's Compensation Insurance forms; consideration of benefits bestowed by employer.

PERSONAL GOALS IN HABITS AND ATTITUDES

For purposes of conciseness, desirable habits and attitudes are listed in the outline below, with suggestions as to the types of experiences that will aid in their development. Again it is emphasized, however, *that these experiences are only illustrative and that in every case they are to be used within the situation to which they belong.* They cannot be considered individual lessons or assignments handed down by the teacher to the pupils, but are elements within the total unit of experience that suits best the nature of the class. Development of standards with the pupils rather than dictation of standards to the pupils, mutual constructive help rather than criticism, a positive constructive attitude on the part of the teacher rather than a negative destructive point of view, the use of specific situations rather than abstract generalizations—these are some of the keynotes of successful curriculum development. They should be constantly kept in mind in the interpretation and use of the personal goals presented in the outline below.

Special emphasis should be placed upon the inculcation of habits of self-reliance and courage. Perhaps there is no child more in need of courage than the mentally retarded, unless it is the child with two or more handicaps. The entire curriculum should be organized with the idea of developing in him, insofar as possible, the necessary pluck to carry on in a world not particularly favorable to him. Experiences which tend to develop courage include those which give him confidence in himself. Receiving appreciation for efforts made will stimulate the spirit and the desire to go further. Meeting ridicule without caring too much is often accomplished through achievement in some specific type of work. Observing workers in the various industries encourages boys and girls to work toward the time when they may be similarly occupied. No effort should be spared to make them feel that they can achieve in their own way.

OUTLINE OF PERSONAL GOALS AND SUGGESTED EXPERIENCES

HABITS AND ATTITUDES	SUGGESTED EXPERIENCES
Neatness and cleanliness.	1. Development with children of essential elements of personal hygiene. (On the basis of the list of items or questions developed, let each child use a self-rating card and talk it over with the teacher from time to time.) 2. Use of the same items in helping each child to keep a "Book About Myself"—at the party, on the trip, or in some other specific situation. 3. Emphasis upon child's physical assets, and encouragement to make the most of them in his personal appearance.
Tolerance	Recognition of individual differences which must be respected. (*Example:* Any class often enrolls a child who deviates very much either in appearance or behavior, such as an epileptic, whose seizures are of the petit mal type, or a mild post-encephalitis case. By talking confidentially to the group in the absence of the child in question, the teacher can enlist the sympathies of the group and make the deviate socially acceptable. The attitude of tolerance for persons more successful in school—those not in the special class—is less easily formed, but even that may come if contacts can be made so that the retarded child feels equal or superior in some respect. Through such contact the retarded child also learns that there are those who are superior to him in other ways and he is led to face his own handicap squarely.)
Cooperation	1. Participation in group activities: (*a*) Planning together for any future event. (*b*) Working together toward a common goal, such as bringing papers for a paper sale, decorating the Christmas tree for the school. (*c*) Contributing to a room exhibit, illustrating some phase of school work. 2. Collection of data and editing a school paper. 3. Organization of a school museum.

HABITS AND ATTITUDES	SUGGESTED EXPERIENCES
Fair play and honesty.	1. Engaging in sports, competitive and co-operative; playground activities; inter-school meets. 2. Use of streetcar coins for transportation to and from school when furnished by school system. 3. Running errands involving expenditure of money. 4. Facing situations truthfully. 5. Use of cash register in cafeteria training classes. 6. Marketing and school banking experiences. 7. Using one's time without waste. 8. Assisting in sale of toys and other hand-work.
Self-reliance and courage.	1. Planning school plays. 2. Participating in auditorium periods. 3. Reading stories to a group of younger children. 4. Keeping a list of individual achievements. (*a*) Making a toy. (*b*) Keeping an orderly desk. (*c*) Learning to read, spell, write, or figure. (*d*) Enumerating any special talents. (1) Singing solos. (2) Playing any musical instrument. 5. Doing something for others. (*Examples:* A special class in a very poor district discovered that towels were no longer furnished to the school; so they collected sugar sacks, washed and hemmed them, and made them ready for use in the school. They have hemmed 400 such towels. This same class dressed 35 dolls for the holiday bureau, which will be given to poor children. Another group made toys for the children of an unfortunate mining camp. Other groups collected pictures and made them into scrapbooks for sick children in hospitals. Others filled baskets for Thanksgiving offerings.)

HABITS AND ATTITUDES	SUGGESTED EXPERIENCES
Loyalty	Loyalty to the home and its members can easily be instilled with participation in those experiences previously described under "Social Experiences in Home Life." Loyalty to school will be the result of many of the experiences listed under "Social Experiences in School Life." Loyalty to church, clubs, and friends can be developed through almost daily experiences if there is a real awareness on the part of the teacher. In fact, this is the crux of the whole matter. Opportunities arise constantly in nearly every activity carried on in a modern classroom, which may be capitalized by the thinking teacher.

APPLICATION TO UNITS OF EXPERIENCE

How the teaching of social attitudes can be integrated with the activities of a unit of experience has already been suggested in connection with the examples given in chapter 4. Further suggestions are given in the following outline, which represents what one teacher did in analyzing the opportunities inherent in a unit based on the study of food. It should be noted that every habit or attitude listed is presented as an element within a specific situation and not as an abstract principle. The more concrete instruction can be made, the more effective it will be.

Study of food

Activity	Social attitude	Means of encouragement
1. Writing letters to selected food companies.	Interest in social aspects of life.	Selecting best representative companies to write to. Writing letters good enough to send.
2. Visits by representatives from food companies.	Courtesy	Being polite to visitors; thanking them, etc.
3. Writing original play about food.	Independent judgment; open-mindedness.	Selecting best dialog. Taking criticism in good spirit, if part is rejected.
4. Making costumes and scenery.	Helpfulness; cooperation.	Working together well. Helping each other over difficult parts.
5. Rehearsing play	Promptness	Being on time for rehearsals.
6. Planning Christmas party.	Thoughtfulness; thrift; meeting disappointments bravely.	Planning to do things that everyone enjoys. Planning menu economically. Accepting cheerfully the fact of not being able to exchange presents.

Any unit of experience can be analyzed in the same way for the opportunities which it presents for vitalizing social education. Teachers who make a study of the social experiences actually at hand and who use them wisely in relation to the instructional program are developing a living, effective curriculum as changing as life itself and as the social order of which the school is a part. They will be preparing the children entrusted to their care to make the necessary adjustments to the social order, to use their leisure time advantageously, to differentiate truth from falsehood, to use whatever thinking powers they possess, to present their thoughts on any given subject within their experience to the best of their abilities, and to live a life that within their limitations is effective and worth while. They will find the problems of civic life that are of importance to the child and lead him to an understanding of his civic responsibility to the community, the State, and the Nation. History and geography will

inevitably be drawn into the picture as some of the units of experience are developed and as civic problems are discussed. Furthermore, the teacher who has a working knowledge of the personal goals as listed in this chapter and a vision of such social goals as the improvement of social justice, the ironing out of inequalities, and the betterment of society, can promote discussion of those current problems which come within the experience of his students and which are in keeping with their needs and interests.

It should be remembered that the child is continually building attitudes toward teacher, lessons, school, parents, home, country, and even toward himself. Whether these attitudes are desirable or undesirable depends upon the effectiveness of the educational program that begins early and continues throughout the formative period. Attitudes once formed tend to remain and largely to determine whether the child will be able to adjust himself to the world.

SUMMARY

1. Social experiences common to the home, to the school, and to the community offer the most logical means for developing wholesome adjustment to the community and the ability to contribute to community life.

2. Specific situations arising in these experiences should be used day after day as the means of emphasizing and inculcating socially desirable habits and attitudes. Abstract generalizations must give way to concrete applications.

3. There must be sufficient repetition of experiences to form the habits and attitudes desired. Mere suggestion will not do the work.

4. Every unit of experience should be analyzed by the teacher for the opportunities which it presents for vitalizing social experience. Any activity is justified only in terms of its specific contribution to the ultimate social efficiency of the individual.

SUGGESTIONS FOR READING

GLOUSER, LUCY W., *and* MILLIKAN, CHLOE E. Kindergarten-primary activities based on community life. New York, The Macmillan Company, 1929. 307 p.

The units described here will be suggestive to the teacher who wishes to develop social concepts in the experiences of the special class. Illustrations and bibliographical material are included.

FINCH, CHARLES E. Guide posts to citizenship. New York, American book company, 1927. 278 p.

One of the objects of this book is to provide a series of experiences related to civic attitudes and activities in such a way that they will stimulate children to think and so enable them to profit by the experiences of others. Written for junior high-school pupils, but contains much excellent material that can be adapted by the teacher.

HOLBROOK, HAROLD L., *and* MCGREGOR, A. LAURA. Our world of work. New York, Allyn and Bacon, 1929. 351 p.

Written for regular junior high-school pupils, but contains much material upon the basis of which the teacher of retarded adolescents can develop the consideration of occupational opportunities. Includes an outline for intensive study of an occupation, bibliographical material, and sources of visual material for the study of occupations.

HUGHES, AVAH W. Carrying the mail. New York, Lincoln school of Teachers college, Columbia university, 1933. 253 p.

A description of a "unit of work curriculum" in operation, centered about a community activity. Shows the coordination of various subject activities. Appendix lists source materials and bibliography.

REED, MARY M., *and* WRIGHT, LULA E. The beginnings of the social sciences. New York, Charles Scribner sons, 1932. 224 p.

The authors approach the subject from the standpoint of children's interests and experiences, endeavoring to enrich the social science curriculum in this way. Extensive bibliographical material and suggestions for activities and equipment are included.

STORM, GRACE E. The social studies in the primary grades. Chicago, Lyons and Carnahan, 1931. 596 p.

Describes ways in which units have been worked out dealing with phases of social and community life. Gives sources of illustrative material and lists books for both teacher and children. Written for regular grades but may be adapted to needs of retarded children.

NOTE.—See also books of comprehensive scope listed in chapters 2 and 3.

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CHAPTER 7: ACADEMIC EXPERIENCES

IN CONSIDERING the skills which mentally retarded children should master, we must keep in mind the nature of their handicap as well as the objectives of their education as discussed in previous chapters. Because their powers of judgment and reasoning are limited, long-involved sentences, abstract words, and abstract number ideas are usually beyond their comprehension. Therefore, they must not be asked to waste time trying to master all of the academic skills required of intellectually normal children. In keeping with established objectives, it is important to remember that only those skills which are instrumental in the development of a useful adult life, as well as a happy childhood, should be attempted. In these matters we must be severely practical, but the presentation must be made through interesting vehicles. As with social experiences, the child learns to read, to write, and to add more readily when the need for learning arises out of an experience through which he is living at the time. He becomes so interested in the situation or in the manipulation of objects connected with the experience that he is either unaware that he is learning or is definitely tackling a difficult piece of work as a means toward reaching a goal which this new experience has opened up to him.

READING

Reading is an important factor in the social life of the child in helping him to take his place with normal people in the community. Yet adult reading needs in their simplest terms are few. In order of importance they are: (*a*) Reading for protection, (*b*) reading for information or instruction, and (*c*) reading for pleasure. Some mentally retarded children will be able to master only enough reading for their own protection. Others will be able to add reading

for information and instruction. A few will read for pleasure.

Reading for protection.—The child should be able to recognize instantly such signs as DANGER, CAUTION, EXIT, KEEP OFF, EXPLOSIVES. He should be able to read pedestrian traffic signs such as KEEP TO THE RIGHT, WALK FACING TRAFFIC, WATCH YOUR STEP. He will need to be able to read streetcar, train, or bus signs, showing their destination; also such signs as NO SMOKING, DO NOT PUT HEAD OR ARMS OUT OF WINDOW, DO NOT TALK TO THE MOTORMAN, SPITTING PROHIBITED, NO SPITTING. All but the children of lowest grade of intelligence will have need to learn auto traffic signs. These will include such road signs as SCHOOL—GO SLOW, STOP—LOOK—LISTEN, CROSSROADS, CAUTION—MEN WORKING AHEAD, ROAD SLIPPERY WHEN WET, DANGEROUS CURVE, STEEP GRADE, NO LEFT TURN, CAR STOP.

Reading for information and instruction.—In order that the child may find his way about the community, he must be able to read street signs, streetcar signs, transfers, time tables, and official signs and warnings. He must also know how to find a name through the alphabetical lists given in the telephone and the city directories. Any other reading items should be introduced that are common to the social and industrial or agricultural environment of the child. He should be able to read labels and names of all household necessities such as names of articles of clothing, drugs, groceries and vegetables, and common tools. He should be able to read the names of the stores or departments in stores that carry such items. His reading vocabulary should include the names of common plants and animals, also family words. He should be able to read newspaper advertisements such as announcements of sales, "Help Wanted" and "Lost and Found" columns.

Reading for pleasure.—Children of low intellectual ability frequently read for pleasure if carefully guided and directed to material that is within their comprehension and interest. Among the first sources to which they turn are the "Fun-

nies" and at least the headlines of the "Sports Page." Some booklists have been made out by librarians and others interested in the reading of retarded children indicating the books most frequently preferred by them. Any teacher can develop such a list for himself, but he should be most careful to offer the children only those books which they can handle with ease.[1]

Some of the items suggested above will be common to the lives of both city and rural children, others only to one or the other group. Each group should have a vocabulary suited to its own particular needs. Each child should go as far as he is able. A very deficient child in the city may be able to learn only the names of streets in his immediate vicinity. Others with more ability will learn the geography of the city and will be able to learn the names of all principal intersecting streets, of all parks in the community, and of the important buildings. Still others, especially those whose families use the automobile as a means of travel, may be able to learn the geography of the entire State as well as of neighboring States. There is no limit set except the child's ability and interest.

The rural child of very low ability may be able to learn only the names of crossroad signs of his immediate vicinity and the name and destination of the bus that passes through. Others may learn the names of the towns through which the bus passes and the destination of other busses met at junction points. To these rural children the physical geography of the State should be of special interest.

This type of vocabulary for either city or country will be built naturally and with ease through many units of experience in which the need to know the geography of the locality arises. Such experiences include:

1. Walks about the vicinity of school and home.
2. Trips about the city to—
   - (*a*) Market.
   - (*b*) Dairy.
   - (*c*) Bakery.
   - (*d*) Art gallery.
   - (*e*) Parks or playgrounds

[1] See Ingram (op. cit.), pp. 372-376, for a suggested list of this type.

3. Tracing the progress of farm products to their markets.
4. Tracing some manufactured article from the factory to farm or home.

Experience reading.—Emphasis should be placed on so-called experience reading, involving items common to the activity being carried on in class. For example, if a class activity centers around "Household Pets", the child must acquire many new words for his reading vocabulary. Together teacher and pupils will develop phrases, sentences, and paragraphs that will be printed on charts and in turn become the next day's reading lesson. Through discussion and work periods the new words will be made a part of the child's vocabulary. They will have real meaning for him. When he encounters them again in another reading situation, they will give meaning to the new subject matter.

The experience and vocabulary used must always be in terms of the psychological maturity of the child. The experience must be real to him, and to be real it must be well within his ability to understand it. The subject "Household Pets" has interest for all children, but to the child with a mental age of 6 years, a dog is "just a dog." To him it is little or big, black or brown. His reading experience may center around the following ideas:

1. The dog as a playmate.
2. His habits (what he eats, where he sleeps).
3. How we should take care of him.
4. Why we should take care of him.
5. Tricks he can learn.
6. How to punish him.
7. How to reward him.

The child with a mental age of 8 or 9, on the other hand, will be interested to go further and to learn about the different breeds of dogs, the native country of each breed, the different characteristics and uses of each breed, and other items.

Again, in carrying out a "Post Office" unit, the interest of the child who has a mental age of 6 will not go beyond the postman, the letter, and the stamp. The child of a mental age of 8 or 9 years will want to learn about the duties of the local postmaster, the train mail, the air mail, and the ocean mail. The boy who is 14 or 15 years old

and who has a mental age of 10 or 11 may be interested in mail rates, routes, and perhaps in subsidies to airplane and ship companies for the carrying of mail.

In grading the reading vocabulary according to the mental age of the child, constant reference should be made to standard word lists as checks upon the pupil's vocabulary. Among those which will prove helpful are "A Reading Vocabulary for the Primary Grades", by Arthur I. Gates, and the "Thorndike Test of Word Knowledge",[2] for the upper grades, which is issued in four forms, each consisting of the same number of words graded according to importance.

Building up reading ability.—Continuous and sufficient drill in the mechanics of reading is necessary to make the child feel at home with the reading content specified above. There are several new readers which, with their accompanying work books, are the result of much research work on the mechanics of reading. The subject matter of these books is within the experience of most children and fits in very aptly with various units of experience. They are of invaluable assistance, representing the work of expert teachers under the guidance of psychologists who recognize the mechanical difficulties of reading.[3]

The seriously retarded child stays at one reading level so long, however, that the supply of book material within his experience and at the same time suited to the interests of his life age is inadequate. Therefore it is necessary for the teacher to develop much that the child reads from other sources, such as newspaper or magazine articles, science readers, geographies, and histories. Such material must be rephrased into short paragraphs and simple sentences, with simple ideas directly stated, words within the child's vocabulary, and a few new words at a time. Work sheets planned to go with these reading lessons should be planned with the definite aim of developing the child's use of the mechanics of reading.[4]

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[2] These word lists are available through the Bureau of Publications, Teachers College, Columbia University, New York City.

[3] See Ingram (op. cit.), pp. 369–370, for a suggested list of such books.

[4] See Organization and Administration of Special Education Classes for the Orthogenic Backward, pp. 52–60 (op. cit.), for typical work sheets that can be prepared by the teacher for use in reading and language.

The child who has not yet reached a mental age of 6 is not ready to build up reading concepts. He should share in the group's unit of experience, develop his own background of experience, and increase his speaking vocabulary. His reading work should be of kindergarten or preprimer level, involving largely the matching of words and objects or of words and pictures.

LANGUAGE AND SPELLING

Since spelling is the medium of written language, these two phases of work are here considered together. Language is the mode of expression of the child growing out of his activities and interests. Oral expression is the chief aim of language instruction for mentally retarded children. As adults they should have clear, distinct speech, be able to express their thoughts in simple sentences, be able to speak over the telephone, and to ask for or to give simple directions.

In the classroom the child's facility with language will grow under the teacher's guidance as his field of life experiences enlarges. His speaking vocabulary should increase and his meaningful reading vocabulary will increase accordingly. He should learn to speak clearly. He should learn to express complete thoughts before he learns to read sentences or paragraphs. He should use his language ability in reading, arithmetic, social science, arts, and other fields. The fact that language is so general a subject makes it imperative that a check list be used constantly to evaluate the work that has been done. Such a list can be formulated by the teacher on the basis of the activities carried on in class, supplemented by Thorndike's list referred to above.

Written language grows out of the use of oral language. The pupil must be able to say first that which he wishes to write. A need for written language will arise when he wishes to write a letter to mother inviting her to a school party, or to a firm asking for information, catalogs, folders, or exhibits. He may wish to write a simple account of an activity being carried on in the classroom or to compose a greeting for Christmas or Easter. Every experience carried on under the teacher's guidance provides opportunity for

developing written language in conformity with the probable demands that will be placed upon the retarded child as he grows up. Among the most common activities that will demand written expression will be those involving application for a job, ordering goods from a mail-order house, writing letters to relatives or friends, and certain other experiences that may be peculiar to his own social environment.

Spelling needs are simple and demands in this direction should involve only those words which are likely to be included in the pupil's adult writing vocabulary. Numerous standardized spelling scales have been published [5] which may be used as basic check lists. The limit of progress should be determined only by the child's own ability to master the mechanics of the spelling of words common to his needs. In some cases it is the one field in which a mentally retarded child seems to excel.

Again the activities carried on in the classroom should be the basis for introducing new words. Words so derived will be meaningful to the child. They will already be a part of his speaking vocabulary and he will readily recognize the need of making them a part of his writing vocabulary. Their correct spelling should not stop with the so-called "spelling lesson" but should be a part of every writing activity in which the child engages.

NUMBERS

Adult arithmetic needs.—The everyday demands of arithmetic in adult life are simple and few. They generally involve the use of money and of making change. The chief problems relate to table or household expenses and are concerned with such items as groceries, fruit, meat, milk; clothing, drygoods; house furnishings; fuel, electric light, gas; rent or taxes. Other problems involve the figuring of wage

[5] Among these spelling scales are:
Buffalo spelling scales. Grades 2–8. Bloomington, Ill., Public School Publishing Co.
Iowa dictation exercise and spelling test. Form A—grades 3–4; Form B—grades 5–6; Form C—grades 7–8. Iowa City, Iowa, State University of Iowa, Bureau of Educational Research and Service.
Morrison-McCall spelling scale. For grades 2–8. Yonkers, N. Y., World Book Co.

rates per hour, week, or month, the use of time schedules and common weights and measures. Some of the boys will be papering rooms in their own homes. They should have the necessary number facts and skills at their command. Some will be planting corn and should be able to figure the cost. Some may build chicken coops or hen houses. They should know how to buy lumber. Whatever number situations arise in the life of the child or in the life of his family should be considered good content in arithmetic, provided his mental level is high enough to enable him to cope with them.

In any situation it is probably safe to say that the essentials of number development in classroom activities should include much practice with the following skills:

(1) Addition and subtraction of two-digit numbers.
(2) Addition and subtraction of dollars and cents.
(3) Content of multiplication tables.
(4) Short division.
(5) Simple fractions and mixed numbers, concretely applied (e. g., ½, ¼, 1¼ 1¼, 1), common to measuring of pounds or yards.
(6) Common weights and measures.
(7) Clock and calendar facts.
(8) Time tables and schedules (railroad, bus, airplane).

Meaningful experiences.—The mentally retarded child needs many meaningful experiences with numbers before he is ready to handle simple problems. Every classroom activity in which a number situation arises should be made a part of his experience. His ideas of number values must be systematically built up out of his immediate environment and should be based upon objects which he can handle or, less frequently, with representations of objects through pictures. The following may be considered common to every child's experience:

(1) Real money for real buying, or, if this is not possible, for playing store.
(2) Desks, scissors, crayons, etc., to count.
(3) Boys, girls in the class—to count and to compare.
(4) Boys, girls, absent today—yesterday.
(5) Party preparations—counting napkins, plates, cakes, apples.
(6) Representations in pictures; e. g., 4 baby ducks and 1 mother duck; 2 black dogs and 3 brown dogs; 3 birds in a tree and 2 in the sky.

Number vocabulary.—Through the type of experience enumerated above the child should develop a concept of number values and relationships. He should know in doing things that the "and" relation means addition; and that "difference", "how much more", "lost", or "gave" means substraction. He is not ready for written problems until these items are part of his speaking vocabulary and are recognized as "cues" for the solution of oral problems.

He should acquire before he leaves school a working vocabulary of certain common arithmetical terms that he will commonly encounter in a work-a-day world. The following terms, most of which are taken from "The Vocabulary of Arithmetic", by G. T. Buswell and Lenore John, represent some of the concepts common to everyday usage:

1. Terms relating to time, space, or quantity:

another	enough	pair
apiece	both	part
double	increase	smaller
twice	less	some
each	many	none

2. Terms relating to measurement:

dollar	inch	pounds
dozen	measure	quart
quarter	acre (for rural child)	weigh
dime	half	
cent (penny)		
nickel		

3. Commercial terms:

bill	cost	rent
buy	earn	sell
change	expense	spend
charge	price	worth

Drill on fundamentals.—The use of the unit of experience does not eliminate the need of drill. It is the use of the newly acquired tool over and over again in many and varied situations that makes it a permanent part of the child's knowledge, and the mentally retarded child is of all children most in need of such repetition if he is to acquire a given skill. Short drill periods have a place in arithmetic as in other fundamental processes, and can in practically every case be based upon the content of the unit of experience. One can add two cupfuls of water and three cupfuls of

water to make a pitcher of lemonade. One can make a garden patch 4 feet wide and 8 feet long. One can divide a day's wages into halves. Through countless applications the attainment of skill in the fundamental processes can become for the child an interesting, purposeful activity rather than a meaningless process.

PENMANSHIP

Legibility is the chief goal of instruction in penmanship, and this requires the achievement of muscular coordination, proper posture, and proper manipulation of the pencil. Once the child has acquired the ability to form even well-spaced letters, he should be impressed with the fact that we write only to convey a message or to preserve a record of some interesting event or important fact. Therefore his writing must always be legible, neat as to form, and free from smudges.

Constant vigilance on the part of the teacher to see that the child always assumes a proper writing position, that his paper is properly placed before him, and his pencil properly held will produce far better and more lasting results than any amount of formal instruction. To be sure, habits here as elsewhere need to be formed through much repetition. Hence drill again has its place, but the mentally retarded child does not automatically transfer "copybook" penmanship to his ordinary everyday requirements in writing. After the bare essentials have been acquired, the best practice that can be given to him is in immediate connection with his writing activities. Written language and penmanship are thus supplementary to each other.

SUMMARY

1. The nature of the mentally retarded child's handicap limits both the amount and the kind of subject matter by which he is able to profit. In individual cases, however, no restriction should be placed upon the content of academic experiences in which the child participates save that which is imposed by each child's own lack of ability to comprehend.

2. In general, the criteria for the selection of academic subject matter should be the probable need for it in adult

life and its possible contribution toward development of a happy childhood.

3. The approach to the mastery of subject matter should be through experiences of the child at the level of his social interests, presented through concrete ideas and the manipulation of objects. Every academic skill can be taught through many and varied experiences with the same fact, these experiences forming the basis for the necessary drill.

4. The choice of the subject matter to be presented at a particular time should be in response to a real need or interest on the part of the child in meeting a particular situation or in solving a particular problem.

5. Word lists, spelling lists, multiplication, addition, and subtraction tables may serve as a valuable tool in selecting the skills to be achieved, and as a check to determine the skills already acquired and the amount of drill needed.

SUGGESTIONS FOR READING

BRUECKNER, LEO J. Diagnostic and remedial teaching in arithmetic. Philadelphia, John C. Winston company, 1930. 341 p.

Analyzes processes, and discusses difficulties met, with illustrative case studies. Includes discussion of tests that can be used in arithmetic.

BRUECKNER, LEO J., *and* MELBY, ERNEST O. Diagnostic and remedial teaching. New York, Houghton Mifflin company, 1931. 598 p.

Presents methods used for diagnosis and remedial work in arithmetic, reading, spelling, language, hand writing, and other fields. Gives references at close of each chapter which furnish guidance for further study.

DALGLIESH, ALICE. First experiences in literature. New York, Charles Scribner's sons, 1932. 162 p.

From this book, written primarily for teachers of young children, those working with retarded pupils may glean many suggestions that will help them to discover reading interests and materials for use.

GATES, ARTHUR I. The improvement of reading. Rev. ed. New York, Macmillan company, 1935. 668 p.

This book is essentially a manual of directions for diagnosing and correcting defects in reading in the first eight grades. Extensive bibliography.

MABIE, ETHEL. Language development in primary grades through school activities. Bloomington, Ill., Public school publishing company, 1930. 96 p.

The author's aim is "to suggest methods and materials by which the pupil may be made aware of himself as an individual, proud of his home relationships, and awake to interesting things in his surroundings", with appreciation and enjoyment of social contacts. Gives many concrete suggestions for classroom activities in language development.

PENNELL, MABY E., *and* CUSACK, ALICE M. Teaching of reading for better living. New York, Houghton Mifflin company, 1935. 469 p.

Contains a wealth of concrete suggestions and devices for reading activities designed to contribute to the fundamental objectives of the school. Considers the preprimer stage as well as the work of grades 1 through 6. Extensive lists of reading material for pupils are included.

NOTE.—See also books of comprehensive scope listed in chapters 2 and 3.

CHAPTER 8: EXPERIENCES IN SCIENCE

A CURRICULUM IN science which may be excellent for the regular elementary grades is not necessarily either desirable or practical for special classes of mentally retarded children. This follows from the characteristics of retarded children already discussed. They are not as observant or as well-informed concerning things about them as are normal and mentally superior children. They do not grasp abstract ideas readily. They must have intensely practical experiences and many varied repetitions of experiences of the same general type if their observations and interpretations are to function effectively. Finally, some of the content usually included in junior and senior high school science is of utmost value for efficient living and can be taught realistically and simply enough for the mentally retarded child to understand and to use. Since, by definition, he will not be able to meet the standards of the regular classes in junior and senior high school, such content will need to be presented to him in his own group or in terms of his own ability to understand. These facts make it imperative to make careful selection of curricular material from all fields of science, directed toward increasing the child's equipment for daily living.

REQUISITES OF SATISFACTORY MATERIAL

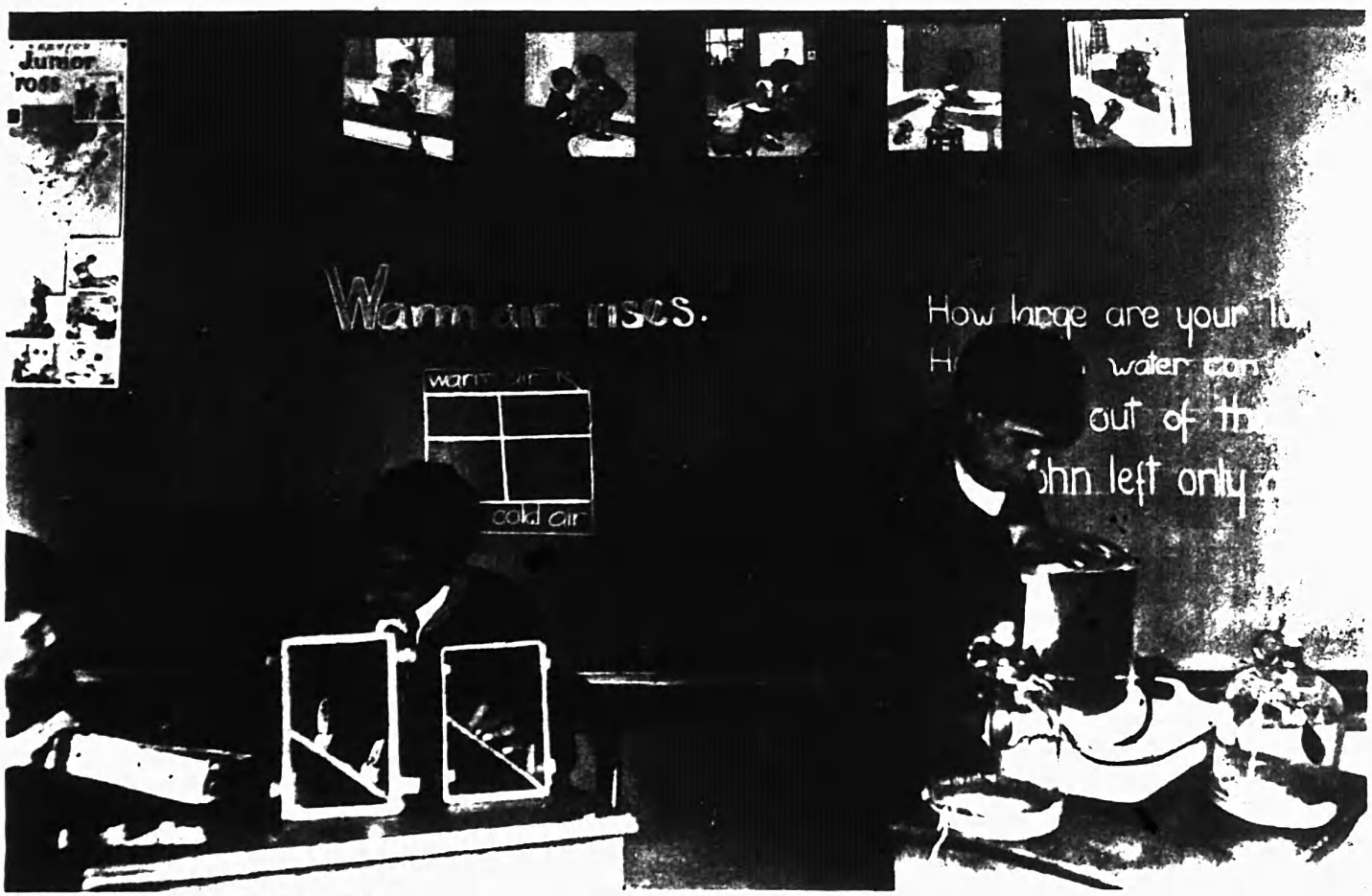
Both the physical and the biological sciences offer material of interest and value to mentally retarded children. To be acceptable such material must, in the first place, contribute to interpretation of the environment, to adequate adaptation within the environment, and to the appreciations and attitudes that add to the enjoyment of the environment in which one is living. In the second place, the subject matter selected must be simple enough for mentally retarded

children to understand, tangible enough for them to appreciate, and objective enough for them to utilize. That which is an integral part of the environment as they see it and work with it from day to day and which can be explained objectively with concrete materials at hand constitutes the most desirable content.

The experiences selected should contribute to the development of habits of more careful observation and to the extension of wholesome interest in the physical environment and thoughtful care of living things. They should bring about an acquaintance with those scientific facts that concern health and safety. They should stimulate economic purchase and use of commercial products and mechanical devices, with an ability to make selection on the basis of value and durability. They should add to the power to interpret simple phenomena of the physical environment and of the behavior of living things. Finally, they should open up some possibilities for the use of leisure time.

It is, of course, understood that experiences in science are a logical part of every unit of experience planned by the teacher. The teacher who says, "Now we shall have a science lesson", and who fails to see the vast opportunities for leading the children into realms of experiences in science through the unit on the home, on foods, on clothing, or on any other theme, has lost his opportunity to integrate the daily experiences of his pupils into a meaningful whole. The topics listed in this chapter are therefore suggested not as themes to be presented through isolated discussions or experiences, but as phases of scientific subject matter that can be either closely related to the total units of experience with which they individually belong, or used as the basis of an experience to which other fields are related.

For example, an entire unit of experience might be planned about the subject of plants. In one class, the children planted several kinds of seeds in flower boxes, which in due time became aglow with color and beauty. The flowers furnished the approach to a study of the place of seeds and of roots in plant life; of different kinds of seeds and roots, including those which are edible; of the needs of plant life; of the use of plants for clothing, for building, for medicine, and for coloring. Into this setting were in-



Courtesy of State Teachers College, Salem, Mass.

EXPERIMENTS WITH AIR AND WATER ARE OF GREAT INTEREST TO THESE BOYS.

EQUIPMENT MUST BE CAREFULLY PLANNED IN RELATION TO THE EXPERIMENTS FOR WHICH IT IS TO BE USED

troduced activities in reading, language, numbers, manual arts, music, health education. Younger children of the group participated in the simpler activities and observed others. It was a socializing experience that helped each child to learn something of and to appreciate nature's work and its effect upon human life.

In another school a unit of work was developed under the general topic of milk. The children of lowest ability cut out pictures of cows, milk bottles, milk trucks; they talked about the milkman and the use of milk at school and at home. The intermediate group took a trip to the dairy, made butter and cottage cheese in the classroom, saw and discussed some "movies" on cows and milk, made reading charts, wrote stories and poems, and modeled out of clay and wood cows, calves, barns, trucks, and milk wagons. The advanced group joined the intermediate group in its activities, but added spelling and arithmetic lessons based on the same material, vocabulary charts, posters, and recipe books. The entire school became "milk-conscious."[1]

The study of habits and needs of native birds might in some localities easily become a part of a unit of experience on "exploring the community." Reading the thermometer might be included in the same unit and be related to weather conditions of the community. Many scientific observations are closely concerned with the subject of foods, a field in which an illustrative unit has already been described in chapter 4. Nature study, biology, chemistry, and physics all offer material from which selection can be made in accordance with the ages and mental levels of the children concerned, and with the units of experiences that are under way. Even the youngest children can watch the birds, the clouds, the rain, the snow. They can observe the change of seasons. They can become acquainted with the flowers and the trees growing in the immediate vicinity; with the habits of common birds, animals, and fish; and with the behavior of the butterfly, the caterpillar, and the ant. They can catch snow in a container and watch

[1] Adapted from Jane Churco. The development of a unified activity in a Binet Center, The Binet Review, 4 : 21-22, March 1936.

it melt; observe snow crystals under the magnifying glass; put water out to freeze; care for pets and for plants; boil water and watch the steam; watch a lighted candle go out when placed under a glass; and watch water disappear from the blackboard after washing. All these observations, experiments, and other activities will help to orient the young child in the world of nature about him and to see some of the simplest ways in which natural law applies to human existence. As he grows older, he will be led to a more scientific knowledge of living things in a natural world through more comprehensive experiences.

SUGGESTED EXPERIENCES

A. Subject matter drawn from the immediate environment of the child.
   1. Habits and needs of native birds.
   2. Preservation of wildlife.
   3. Plant life (indoors and outdoors); its needs for development; absorption of moisture; growth; value.
   4. Daily phenomena of weather: Rain, snow, hail, fog; amount of rainfall.
   5. Function and operation of simple mechanical devices, such as the toy steam engine, water wheel, bellows, air pump, carpet sweeper, bicycle, meat grinder, egg beater, vacuum cleaner.
   6. Some of the major features of the universe, such as sun, moon, earth, stars, clouds, wind, seasons, day and night.
   7. Sources and composition of common materials used for food, clothing, shelter, tools, transportation.
   8. Scientific explanation of some of the modern means of communication and transportation of interest, such as the telephone, telegraph, radio, balloon, automobile, airplane.

B. Skills offered by various sciences that are usable in daily living.
   1. Reading the thermometer.
   2. Pouring from a bottle so that it will not gurgle and spill.
   3. Using a medicine dropper.
   4. Gradually heating a glass container so as to loosen the lid.
   5. Building a fire.
   6. Bleaching or dyeing cloth.
   7. Using a siphon.
   8. Comparing the relative values of cooking utensils.
   9. Simple household processes, such as using a plunger, changing fuses, putting new washers on faucets, making simple extensions for electric lights.

C. Directed observation of simple, well-planned experiments illustrating well-known scientific principles.

1. Buoyancy of water.—Floating different sizes of materials of various shapes in water and noticing the water line of each; experimenting with the shape and resulting variation in the water line; applying to the making of toy boats the principle that objects are buoyed up by the amount of water they displace.
2. Leakage of water.—Measuring the amount of water wasted in a given length of time from a slow leak, appreciating the fact that trivial waste results in considerable loss.
3. Purification of water.—Putting on small glass lids or on dishes (*a*) water from a puddle, (*b*) water from a faucet, and (*c*) boiled water, observing daily through magnifying glass the changes taking place; filtering water and boiling water; investigating the local filtration plant and water supply.

D. Knowledge that contributes to the understanding and appreciation of the behavior and needs of living things.
1. Life cycles of animals and plants.
2. Distribution of seeds.
3. Growth of seedlings and bulbs under different conditions of light, moisture, and heat.
4. Kinds of common trees: Their foliage, fruits, and uses.
5. Behavior and needs of pets at school and at home.
6. Behavior and physical condition of mice fed on different foods.

E. Practical knowledge that contributes to desirable habits of health and safety.
1. Adjustment to different seasons and weather conditions.
2. Effect of bacteria upon food.
3. Ventilation; respiration.
4. Prevention of disease.
5. Posture, care of teeth, eyes, ears, hair, skin.
6. Use of simple antiseptics.
7. Use and repair of electrical devices.
8. Causes, danger, and prevention of short circuits.
9. Use and storage of inflammable materials.
10. Function and mechanics of fire alarm and fire extinguisher.
11. Methods of extinguishing fires.
12. Care of household plumbing in winter.
13. Construction and function of household water system: Water meter, traps in drainage, connection with city systems.

F. Practical knowledge that leads to wise selection and satisfactory use of commercial products.
1. General repair of household appliances.
2. Care, use, quality, and endurance of tools.
3. Choice of cloth: Kinds; characteristics; limitations; values; tests for wool, cotton, and silk; tests for permanence of prints and dyes.
4. Use and limitations of cleaning agents, home-made and commercial.

5. Use of foods: Kinds; values; preservation; refrigeration.
6. Care of heating systems: Kinds; characteristics; advantages; disadvantages.
7. Mechanics of pumps.

G. Construction of simple equipment and common products that will widen the child's range of interest, contribute to better understanding, or lead to wise selection and use of commercial products.

1. Thermometer.
2. Respirator.
3. Medicine dropper.
4. Water magnifying glass.
5. Strong alkaline soap and neutral soap.
6. Dyes, bleaches, stain removers.
7. Common home remedies.
8. Window ventilators.
9. Outdoor window boxes.
10. Thermos container.

H. Experiences which contribute to desirable use of leisure time.

1. Visiting museums and exhibitions of scientific interest.
2. Making mechanical household appliances and toys.
3. Collecting, mounting, and labeling specimens of trees, flowers, rocks.
4. Raising animals, birds, fish.
5. Other hobbies, such as gardening, making weather vanes, sun dials, bird baths, bird houses.

SUMMARY

1. Experiences in science must be simply and objectively interpreted if they are to be of any value to mentally retarded children. Only those experiences should be presented to them which can be interpreted in terms of the daily living of the pupils.

2. Such experiences should contribute to the development of habits of more careful observation, to the extension of wholesome interest in the physical environment and thoughtful care of living things, and to the ability to make practical application of simple scientific facts to everyday living in the interests of health, safety, economy, and enjoyment of leisure time.

3. Experiences in science may be taken from nature study, biology, chemistry, physics, astronomy, and other branches of science which offer material of value and interest.

4. The discussion of abstract principles should be avoided, but activities illustrating the operation of principles should be numerous.

5. The activities in science should not be considered as isolated "science lessons", but should constitute a logical part of the total unit of experience that is under way.

SUGGESTIONS FOR READING

FISHER, CLYDE, *and* LANGHAM, MARION L. Nature science. New York, Noble and Noble, publishers, inc., 1934. Illus.

Book 1, World of nature. 94 p.; Book 2, Ways of the wild folk. 117 p.; Book 3, Our wonder world. 113 p.; Book 4, In field and garden. 104 p. (Intended for children's use.)

HUNTER, GEORGE W., *and* WHITMAN, WALTER G. Science in our social life. New York, American book company, 1935. 452 p.

Content of this book is suited to the interests of children of junior high-school age and much of it can be adapted to the needs of retarded adolescents. Suggestions for activities and reading references are included. Illustrated.

LEINING, EDNA BRIDGE. Millions of years in a winter. New York, Lincoln school of Teachers college, Columbia university, 1935. 197 p.

This is a record of a "fourth grade's venture into the realm of science", planned on the basis of a unit of experience. Illustrated.

Pathways in science, a course for elementary schools. New York, Ginn and company, 1932, 1933. Illustrated.

Book 1, We look about us. 194 p.; Book 2, Out of doors. 269 p.; Book 3, Our wide, wide world. 306 p.; Book 4, The earth and living things. 308 p.; Book 5, Learning about our world. 384 p.; Book 6, Our earth and its story. 462 p. (Intended for children's use.)

PATTERSON, ALICE J. Science for the junior high school. Normal, Ill., McKnight and McKnight, 1929. 360 p.

A source book from which many experiences in science may be drawn for special classes. Illustrated. Bibliography.

REH, FRANK. Science related to life. New York, American book company, 1932.

Books 1 and 2, Water, air, sound; heat and health. 203 p.; Books 3 and 4, Magnetism, electricity; light, forces, and machines. 211 p. Published also in 4 volumes.

Science and the young child. Washington, D. C., Association for childhood education, 1936. 40 p.

A bulletin prepared by the science committee of the Association for Childhood Education. Gives suggestions of science activities, equipment and supplies, and useful books, including those suited to grades above the primary level.

NOTE.—See also books of comprehensive scope listed in chapters 2 and 3.

CHAPTER 9: EXPERIENCES IN THE ARTS

EXPERIENCES IN the various fields of art, including both so-called fine and practical arts, have an important place in the school curriculum for retarded children. Music, dancing, dramatization, poetry; various types of play activity; drawing, painting, stenciling, modeling; household arts; pottery, metal work, leather tooling, and other handicrafts all stand side by side in offering abundant opportunity for both appreciation and creative expression. Interest and ability in these fields are among the strongest assets which retarded children possess. They constitute an emotional stabilizer, at the same time offering great possibilities for enriching the lives of the pupils. It is not to be expected that the children will ever become exceedingly adept in their performance, but they will secure emotional satisfaction and in some cases will make creditable progress, thus becoming socially more acceptable in a normal group.

In planning activities in the arts for the classroom, the teacher should keep constantly in mind (1) the social characteristics of various age and ability levels, as suggested in the chart on the "Unit on Home Life", in chapter 4, and (2) the need for differentiating the curriculum according to these age and ability levels, as discussed in chapter 3. To secure the greatest value from the activities, he should see to it that the work of the children is spontaneous and satisfying and that it is a part of the experience unit under way in the classroom.

MUSIC

The value of music in all its varied forms can scarcely be overestimated. Through it may come the release of pent-up emotions, the development of an innate ability on the part of some, and the sheer joy of singing, playing,

or listening on the part of all. It is a means of expression of which no one is utterly deprived, and it should be used for all it can do to make the retarded child happy through appreciation and participation.

Most mentally retarded children enjoy singing, even though with some it may be limited to humming a tune. Their ability in this field usually excels their academic accomplishments. Hence, it should be capitalized for all it is worth. Sometimes it seems best to teach songs by the rote method, no attempt being made to teach the words correctly until the melody is familiar. At other times it is quite feasible to teach words and music together, and some groups do fairly well even in simple part singing. Accompaniment by the piano or by a band of the pupils' own membership adds to the zest of the activity.

Harmonica bands, toy orchestras, and other instrumental means have been used to develop in the children the joy of creating music and rhythm, as well as to accompany the class in singing. Wind instruments can be played by some children who are intellectually quite deficient. Music is one of the fields which seems not to show a high degree of correlation with academic intelligence. Some outstanding results have been achieved by teachers who themselves were musically inclined and knew how to secure musical expression from their pupils.

The victrola and the radio are both valuable as means of assistance and inspiration in the development of musical appreciation and also as means of furnishing accompaniments. Good music is so frequently given over the radio that a teacher who is fortunate enough to have access to an instrument for the use of his class can employ it to good advantage. While victrolas are still much more commonly found in schoolrooms, radios are now appearing in increasing number.

Correlation with experiences of the day is here, as in all other fields of art, a desirable factor. A period set apart for music without relation to anything else being done may be fun while it is going on. If, however, it is tied up with an experience unit through the selection of songs and musical selections that bear upon the content of the unit, its

message will carry over far more effectively into the life of the child.

PLAY ACTIVITY

Play in its highest form is truly an art. It combines rhythm, coordination, and skill, and holds the possibilities of joyous creative expression. No teacher of retarded children should permit himself to think of playtime merely as an opportunity of relief for himself and a means of getting the children out of the way. Even here they need guidance that, if effectively given, can lead them on to new fields of conquest in social adjustment.

John, a shy, unaggressive boy of 15 with an intelligence quotient of 72, enrolled in a special school, began playing basketball with the other boys of his approximate chronological age and intelligence. For 2 years these boys played basketball correctly but without the degree of skill which is usually found in normal boys of the same age and experience. However, they played a creditable game and were able to compete with high-school boys of the community. After 3 years, several boys, including John, developed skill far beyond the average of the group. He was asked to join a team of local young men and played with them for a season. He has become one of the most highly valued players on the team and has frequently been asked to referee games.

When the team of the special school began playing with other teams of the community, the boys often excused themselves by saying: "We are not expected to play as well as that team." But they soon ceased to use that as an alibi for losing a game, saying instead: "We had better work out some new plays before we meet that team again." Thus, through a form of play activity these boys learned to adjust their thinking and actions to a more acceptable social standard. Their ability to play winning games with local teams is of secondary importance. The greatest gains have been their change in mental attitude and a more nearly normal view of social situations.

Rhythmical games.—All types of rhythm have an important place in the life of retarded children, since it affords a means of releasing activities which have been prevented

by faulty coordination. It is always wise to begin with the child's own natural degree of rhythm and to develop from that point by fitting the music to the child's activity. After some skill in coordination has been developed, it is possible for the child to fit his action a little more nearly to the correct tempo of the music. It is most important in a beginning rhythm class, as in all activity, to be willing to accept much inferior work. If too much attention is given to faulty coordination, the child frequently loses interest in the performance. If the activity seems difficult or some type of coordination cannot be learned through suggestion or imitation, it is better to drop the activity for a while and return to it later than to try to teach the child step by step until he wearies of the effort. Often a rhythm game or dance which proved difficult and uninteresting when first presented will be quickly learned and enjoyed when it is tried again later on. After the activity has become familiar and fun has been experienced in executing it, correction of faulty coordination can be made without causing the child to feel a sense of failure and without the loss of his interest.

It is usually advisable to combine the teaching of rhythm with an interesting game. Many times it has been found that a child is unable to skip in a rhythm class but is able to skip quite acceptably in a simple singing game, such as "Farmer in the Dell" or "Did You Ever See a Lassie?" It has also been observed that a waltz step could not be accomplished when presented as a simple rhythm, but when the children did a folk dance having a waltz step, they performed it without hesitation. The dramatic interest in the folk dance is so great that the step comes more or less without effort.

When remedial work with apparatus or some other form of calisthenics appear to be necessary, it too should so far as possible be made a part of the rhythmical activity. Faulty posture and poor physical coordination can often be overcome in this way. Even older boys and girls of low intellectual level will enjoy and gain skill in activities which normal children of their age consider "baby stuff", provided they are not ridiculed. They do not mind repetition even at an advanced age if the activity is planned with an appealing setting.

Imitative play.—Imitation is common with all young children. Mentally retarded children are no exception. A boy of 7 with an intelligence quotient of 50 frequently worked for a half hour trying to fit a flat board into a small window in a door, as he had seen a glazier fit a pane of glass. He used a small stick to tap the board in place and also made it serve as the putty knife to put the pretended putty on the edge of the pane.

The most common expression of imitative play is probably in enacting the role of some person or animal or thing with which the child is familiar. The nurse or the doctor, the mother or father, are frequent objects of portrayal. Familiar stories also offer opportunities for the child's identification of himself with some character. For example, if the leader announces "I am Red Riding Hood, Who are You?", it will not be long before the child becomes the wolf, the mother, the grandmother, or the wood cutter. Thus story play can be developed that will bring the joy of creation and contribute to the loss of self-consciousness.

DRAMATICS

Dramatic expression is the logical outcome of imitative play and constitutes an enjoyable part of recreation of retarded children whether they are in the audience or acting a role on the stage. However, the plot must be relatively simple with much action. Situations developing from subtle actions or conversation are beyond their comprehension and should be avoided. Lines of the play should be written in their own vocabulary. Unfamiliar words have little meaning for the actor and are repeatedly mispronounced or emphasized incorrectly in the sentence.

To develop meaning, the teacher and the group should go over the play as a whole many times before the parts are assigned. The setting of the play, the roles of the characters, the scenery and costumes should be discussed as thoroughly as possible until the players have a general understanding of the play before actual rehearsals begin. Plays with many characters and major roles, each requiring few lines but much movement, seem to be most acceptable. The child may have little difficulty in automatically memorizing

lines or in following cues, but too often a play resolves itself into a mechanical exchange of words. On the other hand, roles that call primarily for action or movements are quite naturally interpreted.

It is not an easy matter to find suitable plays which have meaning for retarded children and which at the same time are at their social level. Most of those available are either too "babyish" in content or too difficult in plan and vocabulary. Therefore, after these children pass the story-acting period, the teacher will often find it necessary either to write his own plays or to revise some existing play so as to make it acceptable to both the mental and social levels of development of the pupils concerned. Best of all will be the cooperative enterprise of the pupils in writing their own play under the skillful guidance of the teacher, the content being drawn from the unit of experience in progress.

Another form of dramatic play which retarded children enjoy is the puppet show. Operators can develop such plays in the same fashion in which a story play develops, with no fixed lines in the beginning. Gradually the children make up lines in their own words to fit the actions of the characters in the story. Not only do they have fun making their puppets act in a play, but they enjoy constructing and operating them. Just to make them walk, sing, or dance in a fairly natural fashion seems to fascinate older boys and girls. Writing a puppet play as an integral part of a unit of experience, opens up the entire field of reading, spelling, and language activities connected with the experience and at the same time offers the definite incentive of making and operating the puppets. It carries with it the development of skills, habits, and attitudes in the whole realm of activities, fundamental to the education of retarded children.

FOLK DANCING

After the child has mastered simple rhythms and has had experience in various types of singing games he is ready for folk dancing. The dramatic element which makes the singing game enjoyable is then eliminated and the rhythm and complicated step alone hold the child's interest. Girls who for 4 or 5 years have had many singing games are able

Courtesy of Chicago, Ill., Public Schools.

GETTING READY FOR THE PERFORMANCE.

Courtesy of Cleveland, Ohio, Public Schools.

OLDER GIRLS PREPARED ALL THE MATERIAL FOR THE ENTERTAINMENT OF THESE LITTLE PEOPLE

to do difficult folk dances with skill, ease, and pleasure. They are also often able to do clog and tap dancing with a high degree of ability. Boys too are eager to learn to jig, clog, and tap dance, but they usually refuse to do folk dancing, which they feel is unmanly. It is amazing, at times, how efficiently they learn the more popular types of dancing, and to find what an asset they are to them afterward. One boy who was shy and retiring learned to jig. On many occasions he was asked to jig before his classmates and for several school programs. Not long after he had developed this accomplishment his manner began to change. He volunteered suggestions in the schoolroom and seemed to have a greater interest in all, that went on about him. When he realized that he had a social asset in dancing he became aware that he had other abilities as well and exerted a greater effort in all of his undertakings, including academic subjects.

FORM AND COLOR

Art forms, particularly form and color, expressed through picture study, drawing, modeling, and various handicrafts, give to intellectually subnormal children the same opportunity for enjoyment and creative expression that they give to normal children.

From the youngest to the oldest they can be helped to appreciate attractive colorful pictures of artistic themes, chosen to fit into the experience of the day and in keeping with their age levels. Every teacher should have an abundance of such pictures on hand for use as occasion demands. The use of crayons, paints, brushes, clay, and other types of art materials by the children themselves gives to them concrete evidence of a certain amount of control over the things with which they are working.

Many retarded children have difficulty in differentiating colors. To them it is necessary to give much experience in color discrimination. An 8-year-old boy could not distinguish red from orange until he had had months of directed experience. Likewise it is sometimes necessary to give much practice in recognizing various shades of a specific color. This does not mean that retarded children are not

sensitive to color, form, and beauty, but that their observation is less acute than that of normal children.

After a child has to some extent learned to manipulate the materials with which he has to work, his performance gradually shows keener observations. Inasmuch as his work should be as free as possible from arbitrary direction, he should be given many opportunities to exercise his own judgment and to make his own decisions. These are experiences which subnormal children need, since they are constantly asking if "this is the way", "is this right", "show me how", or "help me do it."

As a means of expression, drawing can be of very practical help. A boy of 14, with an intelligence quotient of 64, had difficulty in finding suitable words in describing a piece of equipment found in a bakery. The teacher and children were unable to supply the missing words from his meager account. Suddenly he asked for chalk, saying, "I can't say it, but I'll draw it for you." Although his drawing was crude, the name of the object was supplied and his description of the shop progressed with interest. Instead of resulting in failure, the incident gave the boy a feeling of success, since he had at his command the means of overcoming a difficult situation.

GENERAL ARTS AND CRAFTS

Obviously the particular type of craftwork called for will be determined by the particular unit of experience in which the class is participating, but almost every branch of handicraft offers some opportunity for the mentally retarded child to develop creative ability in connection with the activity under way. No attempt is here made to discuss them all. A few of the more recent books on arts and crafts are included in the bibliography, from which valuable suggestions can be drawn by the ingenious teacher. The following are among the multitudinous activities in handicraft that have been used again and again by teachers of retarded children: Painting flower pots, boxes, china ware; making candy or flower baskets; bookmaking; block printing; making lamp shades; stenciling curtains; weaving scarfs and rugs; making posters or friezes; making favors

for a party; modeling animals or articles of interest; pottery making; tooling leather; making candlesticks; smocking; embroidering.

The younger children will use the paper, paints, crayons, clay, plasticine, and even wood and cloth with some purpose and attention to details. Manifestly, however, only the simplest projects should be attempted by them. The older preadolescent group will formulate increasingly definite plans of work and achieve increasingly valuable results with more difficult projects and materials. When the child reaches the adolescent age, special emphasis is placed upon the manual and prevocational experiences that not only satisfy the creative desire but that are also definitely utilitarian in nature, looking toward employability. These experiences are considered in chapter 10.

SUMMARY

1. Experiences in the arts offer abundant opportunity for enriching the lives of the pupils and for the development of creative ability. They constitute an emotional stabilizer and a means of self-expression that can be secured in no other way.

2. Among the fields of art which should be given a prominent place in the curriculum for retarded children are music, play activity, dramatics, folk dancing, drawing and painting, household arts, and general arts and crafts.

3. Each of these types of activity can be woven into the general unit of activities, thus becoming a part of the total experience rather than a thing apart from the rest of the day's program.

SUGGESTIONS FOR READING

BUFANO, REMO. Be a puppet showman. New York, Century company, 1933. 168 p.

This book covers thoroughly the entire field of puppetry from the writing of the play to its production.

COLEMAN, SATIS N. (*Mrs.*) Creative music for children. New York, G. P. Putnam's sons, 1922. 220 p.

A source book of information for various types of musical activities, including the making and playing of musical instruments, development of the rhythmic sense, singing and voice control, and other topics of importance in the musical training of children. Illustrated.

COLEMAN, SATIS N. (*Mrs.*) The marimba book. New York, The Lincoln school of Teachers college, Columbia university, 1926. 96 p.

How to make marimbas and how to play them constitute the theme of this little book. Illustrated.

DOBBS, ELLA V. First steps in art and handwork. New York, The Macmillan company, 1932. 242 p.

Includes consideration of numerous topics that teachers of retarded children can apply to their own situations, such as picture making, working with clay, bookmaking, house-building activities, dramatics, and toy making.

HAMILTON, EDWIN T. Handicraft for girls. New York, Harcourt, Brace and company, 1932. 270 p.

Includes directions for stenciling, pottery, batik, art metal craft, leathercraft, and other hand projects. Presented simply and clearly, with illustrations.

——— Tin-can-craft. New York, Dodd, Mead and company, 1935. 508 p.

Describes the use of tin plate of discarded tin cans as a substitute for expensive materials in art metal work. Illustrated.

SCHLOTTER, BERTHA *and* SVENDSEN, MARGARET. An experiment in recreation with the mentally retarded. Chicago, Behavior research fund, 1933. 75 p.

Reports a joint project undertaken by the Lincoln State School and Colony and the Illinois Institute for Juvenile Research under the direction of the State department of public welfare. Describes the recreational program in action and analyzes the structure of games used, based upon mental and chronological age.

TODD, JESSIE, *and* GALE, ANN VAN NICE. Enjoyment and use of art in the elementary school. Chicago, Ill., the University of Chicago press, 1933. 134 p.

Presents material for art instruction which lends itself to integration with the regular educational program. Includes consideration of modeling, making paper dolls, designs, dramatics, and other fields, with emphasis upon developing creative expression.

NOTE—See also references of comprehensive scope in chapters 2 and 3.

CHAPTER 10: MANUAL AND PREVOCATIONAL EXPERIENCES

UNDER "manual and prevocational experiences" are included all those fundamental activities of a manual type which help to make civilization what it is. These are primarily concerned with food, clothing, and shelter. No one will deny that children's interests, if given an opportunity to express themselves, will center around these fundamental types of activity. The specific phases of these activities which have been introduced into the schools under the general heading of "manual work" or "manual training" are household science and cooking, sewing, cobbling, weaving, woodwork, metal work, gardening and horticulture, general repair work, electrical work, and simple or complex modifications of these. Which of them shall be used for the instruction of a given group of retarded children must be determined on the basis of several factors, chief among which are: (1) The mental and chronological ages of the children concerned; (2) the availability of trained teaching personnel; (3) equipment provided; and (4) community environment and needs.

How available equipment and community environment contribute to this phase of the program is well illustrated by the following instance. A long unused greenhouse stood on the school grounds. The Board of Education was contemplating its demolishment, but the city supervisor of special classes pleaded for its retention and rehabilitation on the basis that it could serve an excellent instructional and prevocational purpose for the special classes which had recently been assigned to the school building. The request was granted, and the greenhouse very soon became the center of interest in devolping a fascinating experience with flowers in which all pupils of the special classes participated. The youngest children watched the tiny plants

grow and learned to recognize them and to love them. The older ones learned the secrets of soil preparation, of planting, of watering, and of fertilizing. A commercial element in the project appeared when flowers and plants were ready for the market and were sold to patrons of the school. The entire curriculum of the classroom drew its theme from the activities in the greenhouse. The children read stories, learned poems, wrote letters, drew pictures, and sang songs of the flowers. They visited attractive flower gardens in the neighborhood. They kept accounts of costs and receipts in connection with the greenhouse activity. The vocational value of the experience appeared when several of the boys who had been most interested in the work later secured jobs in a local commercial greenhouse. Thus an enriching and a practical experience was realized for these retarded boys and girls because someone saw the possibilities of salvaging a dilapidated piece of equipment that was about to be destroyed.

GENERAL PRINCIPLES

Place of manual activities in curriculum.—In planning manual activities for retarded children, it must always be kept in mind that they are larger physically than they are mentally—that their physical and social interests are governed by minds which are very childish. In other words, a "kindergarten mind" may be directing a body with adolescent characteristics. This is why they have more interest in concrete than in abstract situations—in doing things rather than in hearing or reading about them. It is logical, therefore, to attach great importance to the value of manual experiences in any curriculum used for their training and education. It is in such fields that they receive some of their greatest satisfactions and it is there, too, that they find their way into remunerative employment. By far the greatest majority of seriously retarded children will earn their living in adult life through the use of their hands. While it may not be conceived as the purpose of the school to teach specific trades to seriously retarded boys and girls, yet familiarity with a variety of material and equipment related to mechanical processes, together with a certain amount of skill in

their use, will give some preparation for the new employment situation ahead. Certain experiences have definite vocational implications, as, for example, household science, cafeteria training, sewing, shoe cobbling, tailoring, and gardening, and many jobs have been found in factories, hotel kitchens, cafeterias, parks, and elsewhere, for boys and girls who have been industrious and conscientious in their school work. Numerous employers, however, have indicated that they would prefer to teach the skills of a specific trade themselves if they can secure a boy or a girl who has been taught at school to get along with others, to be punctual and regular on the job, and to be steadfast in work habits.

If, therefore, manual activities are to contribute to the fulfillment of the aims of the education of retarded children, as discussed in chapter 2, they must function in the lives of the children to whom they are taught. They must help to give the child command of himself. They must help him to make judgments in meeting the conditions of his existence. They must help to give to his eyes, to his ears, and to his hands skill sufficient to serve him well in satisfying the needs of his life. They must give him opportunities to experience life situations, and opportunities to use such experience in making of himself a social being.

Coordination with other activities.—Moreover, the teacher must be constantly conscious of the principle of unity running through the whole school program. All too often children have made only a sample of a wooden box, a woven mat, or they have prepared potatoes, without getting any real experiences of the relationship of these things to the rest of their activities. The integration of experience through units of work does not exclude manual activities. What the child does with his hands in the shop or the kitchen should be a living part of the total experience to which each specific activity makes its contribution. The units of work on foods and on child care, as outlined in chapter 4, exemplify this. In other words the teacher must be a teacher of children first, last, and always, with full consciousness of their total lives, and not a cook or a cabinet maker, or a worker in arts and crafts, or even a teacher of any of these subjects. If the departmentalized plan is followed, and a specially trained teacher works with the

children in manual activities, the need for integration is just as great. All teachers dealing with the group must plan together to make the program a unified one, centered about a common theme of interest.

Need of careful grading.—Manual activities need to be planned to progress from the easy to the difficult, from the simple to the complex as do other subjects of the curriculum. Careful grading is frequently the secret of the very good results produced by mentally retarded and feebleminded children, and, contrariwise, the poor results sometimes found are caused by a lack of careful grading of the tasks given to the children.

The expression "tasks given to the children" sounds very traditional. It need not signify anything traditional at all. The wise teacher sees to it that the children have opportunities for manual activities growing out of their experiences and interests, that these activities are within the capacities of the children, and that they furnish a basic training for other manual activities which are to follow.

It is manifestly impossible to discuss in detail all of the manual skills which have been mentioned in the opening paragraphs of this chapter. A few of the most common ones are considered. Others should be handled with the same general principles in mind of careful gradation of work and integration of program. The content of experiences in horticulture or auto repairing or any other specific field must obviously be determined in the light of technical aspects of the subject.

For convenience and clarity the various activities are discussed separately in the following pages and are divided into primary, intermediate, and advanced divisions. In general, the work of the primary division is planned for preadolescent children with mental ages from 3 to 6 years, inclusive; the work of the intermediate division is planned for preadolescent or adolescent children mentally 7 or 8 years old; and the work of the advanced division is for adolescents mentally 9 years or older.[1] There is necessarily much overlapping, since mentally retarded children even

[1] This classification is in general accord with the principles of differentiation set forth in chapter 3.

of the same mental ages differ in abilities, as do other children. Their personal and social characteristics aid or deter them, as the case may be, in using all of their native capacities. Also previous training should always be taken into account. More children than one would think, however, need to begin at the beginning, or near it, and proceed regularly through the various steps. If these steps are carefully graded and are based upon children's interests, the children themselves will enthusiastically choose them and eagerly look forward to reaching the next higher step as a goal of achievement.

COOKING AND HOUSEHOLD SCIENCE[1]

Primary division.—Schematically the work for children who are young mentally and quite untrained in work of this kind might be expressed as follows:

1. Household duties:
   - (*a*) Care of classroom.
   - (*b*) Attention to the appearance of the room.
   - (*c*) Sweeping up small bits.
   - (*d*) Dusting furniture.
   - (*e*) Keeping equipment in order.
   - (*f*) Washing blackboard correctly.
   - (*g*) Care of sink in classroom.
   - (*h*) Cleaning classroom tables.
   - (*i*) Washing dishes.
   - (*j*) Care of milk bottles.
2. Laundry:
   - (*a*) Simple washing of such things as dusters and towels.
   - (*b*) Plain ironing.
   - (*c*) Care of rough dry clothes.
   - (*d*) Sprinkling.
   - (*e*) Blueing.
   - (*f*) Shaking and hanging clothes.
3. Cooking:
   - (*a*) Preparing cheese and vegetables.
   - (*b*) Preparing simple dishes such as boiled rice, macaroni.
   - (*c*) Cooking dried fruits.
4. Personal hygiene:
   - (*a*) Washing hands and face.
   - (*b*) Care of nails and hair.
   - (*c*) Care of teeth.
   - (*d*) Taking baths.
   - (*e*) Care of underclothing.

[1] See also outline of unit of experience on p. 31 ff.

5. Table etiquette:
   (*a*) Skill in handling bits of food and utensils.
   (*b*) Good habits of eating.

Intermediate division.—The work of this division grows directly out of that of the primary division. If the foundation of good habits has been well laid, the children continue to grow in ability to do the simple everyday tasks of life and keenly enjoy the opportunity of doing real jobs for which they themselves see the necessity. The schematic presentation of the work of this division is as follows:

1. Household duties:
   (*a*) Sweeping.
   (*b*) Dusting.
   (*c*) Scouring.
   (*d*) Scrubbing.
   (*e*) Care of gas range.
   (*f*) Care of garbage pail.
   (*g*) Care of refrigerator.
   (*h*) Scraping and stacking dishes.
   (*i*) Fire preventions.
   (*j*) Window cleaning.
2. Laundry:
   (*a*) Washing, rinsing, blueing, starching, hanging.
   (*b*) Sprinkling.
   (*c*) Ironing.
3. Cooking.
   (*a*) Preparing fruits and vegetables.
   (*b*) Boiling water for tea, eggs, and starch.
   (*c*) Simple measuring: Cup, tablespoon, teaspoon; ¼, ½, and ¾.
   (*d*) Setting a table or tray.
   (*e*) Cutting bread and making sandwiches.
   (*f*) Making simple candy.
   (*g*) Making tea, coffee, and cocoa.
   (*h*) Making sauces.
   (*i*) Making soups, simple desserts, and hot breads.
   (*j*) Preparing meat substitutes.
   (*k*) Preparing salad materials.
4. Personal hygiene:
   (*a*) Washing hands before eating.
   (*b*) Personal bathing.
   (*c*) Personal cleanliness in all respects.
5. Table etiquette:
   (*a*) Good habits of eating.
   (*b*) Behaving at meals.

Advanced division.—With the basic training provided in the early divisions, the children in the advanced division are quite able to compete with their normal fellows in the household science departments of the junior high and even senior high schools. The special schools, however, provide a greater opportunity for real jobs for the children. There are so many things that mentally retarded children can do when they reach this division that a schematic presentation of the work can give but a bare outline as a guide for the teacher:

1. Household duties:
   All the odds and ends of duties connected with a house, a cafeteria, or a hotel. The standard for this group should be very high.
2. Laundry:
   (*a*) Careful laundering of more difficult pieces of clothing or household linens.
   (*b*) Knowledge of the use of electric washing machines.
3. Cooking:
   (*a*) Cooking all the different types of food which would be used in a family or cafeteria situation.
   (*b*) Gradual growth to complete independent cooking on the basis of a recipe.
4. Personal hygiene.
   Emphasis on cleanliness and good health habits in all life situations.
5. Table etiquette:
   Manners which would make the children acceptable at any simple family or public table.

Outcomes.—Household science properly taught can provide well-rounded training for both boys and girls. All the fields of the curriculum can be represented in the outcomes. In related academic work, abundant opportunities are offered for application of important knowledge. Counting and measuring, figuring costs of food and equipment, and comparison of values provide the means for developing an appreciation of the value of arithmetic and for the incidental teaching of number processes. Charts, written directions, and recipes give much opportunity for reading for comprehension. Incidental teaching of language, elementary science, and geography is also a part of the total experience unfolded through a unit involving household science.

Personal habits are an essential element in the picture of outcomes. Cleanliness is so very important in the kitchen that clean habits in person and dress are acquired without the necessity of constant preaching about it. Washing hands, keeping nails clean, and hair covered are things that are always "done" when handling food and cooking equipment. It is so obvious that one cannot cook or clean without having the necessary materials and equipment that the habit of providing oneself with these is learned without much friction. The practice of thrift in the use of materials and equipment is easily taught because school provision of money for these things is usually very limited. By necessity both teacher and pupils have to work these things out very carefully.

Desirable *social habits*, too, are encouraged. The kitchen is a splendid place for children to learn to cooperate with one another. Space, equipment, and materials have to be shared continuously. Any dishonesty in work appears in the results. Spoiled food is concrete evidence of careless or indifferent work.

Industrial values are evident. If time is wasted, the meal will not be ready on time. Therefore, the value of time is learned. Moreover, the ability to cook well, and to clean well depends considerably on the habits of perseverance and "stick-to-it-iveness" of the individual. Cooking and cleaning give such understandable results that they aid greatly the development of these habits.

Thus household science, far from being an isolated activity unrelated to the rest of the school life of the child, can be made truly a center of correlation around which a complete living situation can be built. It makes possible both direct and incidental teaching of nearly all the subjects usually listed in a curriculum for mentally retarded children.

WEAVING

Weaving is an activity fundamental to the race and seems unending in its interest for children. Therein lies a certain danger. There is oftentimes a tendency to keep slow-learning children too long on various phases of the weaving process because they like it. Since special classes

are educational and not occupational centers, progressive steps should be planned in teaching weaving just as in teaching other fields of the curriculum.

Primary division.—The following processes may be included:

1. Under-and-over steps taught first with pliable material and later with materials more difficult to handle.
2. Weaving on Tyndall looms.
3. Beginning of chair caning.
4. Stringing up looms.
5. Use of pedal and shuttle.
6. Use of two-harness foot loom.
7. Other activities connected with weaving, such as basketry, knitting and crocheting; also flat reed weaving.

Intermediate division.—In the intermediate division the weaving activities of the primary division are continued, with emphasis on the use of diversified materials and equipment and with much higher standards of work. Much more independence on the part of the pupils is expected in this division of the subject.

Advanced division.—Much skill, independence, and versatility in the processes previously learned are expected in the advanced division. The children should understand the mechanism and use of the various two-harness, table, and foot-pedal looms. Design weaving which approaches the artistic should also be developed.

Outcomes.—Weaving does not offer so many possibilities for completely rounded training as household science. It has, however, many values which add to the skill, the satisfaction, and the happiness of the children. The counting, measuring, and computation necessary for successful weaving give opportunities for further development of a number sense. Natural reading situations are created through the presentation of written directions which the teacher in self-defense will need to have printed. The versatile teacher will also find means for the incidental teaching of language and elementary science. The opportunities for art expression and art appreciation are numerous.

When materials are handled the need of having clean hands and equipment is obvious and the habit grows with little or no antagonism on the part of the children. Also

neatness of equipment and materials is necessary for effective work, and so this habit is learned in a natural situation. Thrift in the use of materials, especially left-over materials, becomes almost an interesting game.

Weaving is more likely to be an individual enterprise than are some of the other activities. There are, however, many opportunities for developing social habits, as in helping others in producing goods for the use of family or school, and in working together on looms, or on a specific article. Good use of time and perseverance are rewarded by the results accomplished. This concrete evidence helps very much to establish the good habit of steady work until the task is completed, thus contributing to the industrial value of the activity.

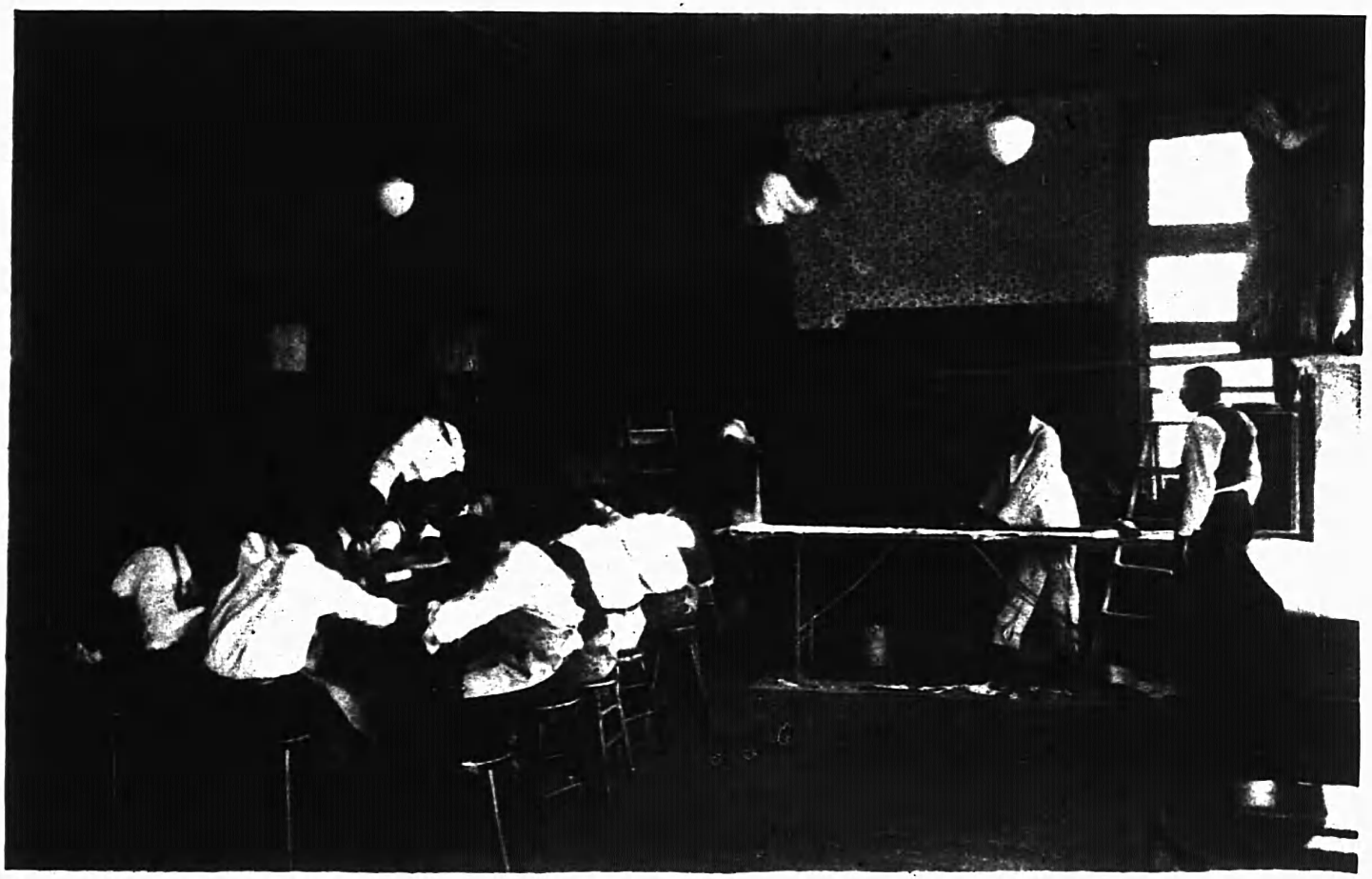
Hence, weaving as an activity has great value if it is used as an educational project. It gives pleasure and has possibilities for the use of leisure time. It is a pity to use the activity as a commercial enterprise merely to make money. There is little value to the children, for example, in turning a class indefinitely into a chair-caning factory. However, there is little objection to selling the articles made for the cost of materials, if the children are not kept at specific phases of the activity too long after they have demonstrated skill. The chief criterion of success in any activity is its meaningful integration with other elements of the school program.

SEWING

There has been some discussion as to whether sewing should be taught in the schools at all. Those who oppose it claim that home sewing is completely out of fashion and even the poorest people buy their clothes ready-made. This claim can be partly but not wholly substantiated. Even if new clothes are bought ready-made, there is still the need of the ability to make new garments out of old ones. Moreover, there is no doubt that clothes of better quality can be secured if the wearer can make them herself. Now that all persons have more leisure time, this factor will be increasingly emphasized. Furthermore, as a prevocational subject, sewing has special possibilities in cities in which there are garment factories.

Courtesy of Kansas City, Mo., Public Schools.

RECEIVING AND ENTERTAINING THEIR MOTHERS GIVE THESE GIRLS AN OPPORTUNITY TO DISPLAY THE RESULTS OF THEIR HOUSEHOLD ACTIVITIES.



Courtesy of Kansas City, Mo., Public Schools.

MEETING A PRACTICAL NEED OFFERS PREVOCATIONAL EXPERIENCE OF GREAT VALUE TO ADOLESCENT BOYS.

Primary division.—There is little place for sewing as such in the primary division of a special group of retarded children. However, the weaving, the coarse work with needle and easily handled materials, and cutting and basting may give in the primary division the necessary training for the beginning of real sewing begun in the intermediate division.

Intermediate division.—In the regular classes, sewing is taught for the first time usually in the fifth grade. The mentally retarded children of the intermediate division are not quite ready for the small muscle work required by a fifth-grade standard of sewing—at least not at first. The processes and stitches of the regular fifth grade of sewing should be used only in a preliminary fashion with coarse material and large tools. The following fundamental processes may be taught as they are needed in making things:

Taking thread.
Threading needle.
Position of needle.
Making knot.
Taking stitch.
Wearing thimble.
Use of scissors.
Tearing.
Creasing.
Pulling thread through material.
Even basting.
Uneven basting.
Back stitch.
Cross stitch.
Chain stitch.
Blanket stitch.
Coarse hemstitching.

The following additional processes and stitches may be taught in connection with some problem of interest requiring their use:

Sewing on buttons.
Overcasting.
Gathering.
Running stitch.
Combination stitch.
Outline stitch.
Straight binding.
Bias binding.
French seam.
Hemming.
Altering curve in fabric.
Making and using a gauge.
Use of commercial pattern.
Making design.
Pressing.
Fringing.
Elementary use of sewing machine.
Mending clothes.

Advanced division.—The techniques taught in the intermediate division should be extended to the advanced division in making all sorts of practical and useful garments needed by the children. Higher and higher standards

should be required until results compare favorably with the work of any pupils in the school system. Not only should high standards of workmanship be maintained but also correct standards of speed. Work should be well done in a reasonable length of time. This type of training is absolutely necessary if positions are to be secured in any sewing factory which offers openings to girls when they leave school.

The problems should be simple at first. There are many different kinds of aprons and many kinds of bloomers. The models must be very carefully selected on the basis of the difficulties they present. The ultimate aim in the advanced division is independent construction of needed garments which are well and quickly made.

Outcomes.—Possibilities are numberless to make the work conducive to desirable outcomes. The many opportunities for increasing number appreciation through counting, measuring, computing, and comparing are obvious in connection with the activity of sewing. Charts on processes and stitches, which are always in view, and directions for making the various articles furnish incentives for reading for special purposes. Facts of elementary science and geography may be incidentally learned in connection with the material used in the sewing activity. Personal habits of cleanliness and of thrift in care of material and equipment are emphasized. Social habits may be developed through cooperative piece work introduced when practical and through making garments for the Red Cross, for public relief agencies, or for individual families. Industrial values of perseverance and "stick-to-it-ive-ness" as well as appreciation of the necessity to avoid wasting time are outstanding. There seems to be no doubt that sewing, or the construction of clothing—a fundamental activity of the race—has its place, when used as a part of a total experience, in giving mentally retarded children vital opportunities for activity which help them to grow in the ability to live.

WOODWORK

So important has woodwork become in the school curriculum that "manual training" has to some people come to be synonymous with "woodwork." Important as this subject

has been as part of the curriculum of the school system, it has been available generally only to boys who have reached the fifth grade in school.

In classes for mentally retarded children opportunities for woodwork activity should be made available to children of lowest intelligence. Construction of things has unlimited interest for both boys and girls. However, in spite of all the fun he may have in hammering and banging, the child needs to be taught how to do things. There is nothing pleasanter than to watch the mentally retarded child develop to the point where he realizes—suddenly from his point of view—that out of the hammering and sawing he is doing he can produce something he wants and can use.

Primary division.—In the primary division, when the children are growing gradually into the knowledge of the construction of things, woodwork is practically an activity of simple hammering, sawing, and nailing. The aim is to have the results only as good as the ability and interest of the children warrant, yet some teachers get amazingly good results and the children the keenest pleasure in attaining these standards.

For the children who want merely to be active and to make a noise there are hammers and nails. Just hammering nails into a block of wood gives the very young and mentally low-grade child much fun and at the same time leads to improvement in muscle coordination. By the time this aimless activity is losing its interest, the teacher may have ready pieces of wood of proper sizes. When the child nails them together a box appears and he realizes that he has "made" something.

From this step, the child goes on to other steps, improving in the use of the hammer and saw and learning the use of new tools as the occasion requires. He also learns to handle various thicknesses of wood. These early steps are very difficult, as are the beginning steps in any activity.

Intermediate division.—Any good outline of work used in a regular class in the elementary school is helpful in planning work for this division of the retarded group. The standards of work should unquestionably be the same as for normal children.

The correct manipulation of the following tools should be taught in connection with the unit of experience:

- Crosscut saw.
- Ripsaw.
- Coping saw.
- Screw driver.
- Coping saw block.
- Brace and bit.
- Countersink.
- Keeler.
- Smooth planes.
- Marking gage.
- Tri-square.
- Sloyd knife.
- Bench hook.

Correct processes, such as the following, should be taught in connection with the unit of work:

- Sawing.
- Sandpapering.
- Squaring stock.
- Gluing.
- Boring holes.
- Use of screw.
- Assembling.
- Finishing.
- Chiseling.

Advanced division.—The children in the advanced division, with the basis of knowledge they have acquired from the activities of the intermediate division, and with the skill acquired from former practice, are able to use more varieties of the tools they already know and to learn the use of additional and more complicated tools. They are also able to use a greater variety of materials.

In this division some boys may begin the more complex problems, such as the building of airplanes, motor and sail boats, book ends, and medicine cabinets. These are mentioned as only suggestive. Any problem which involves the use of the tools that the boys know and the processes they have learned is a suitable one, provided it is in some way connected with the unit of experience in progress. The boys' interests determine the problem. Strange and unexpected, although feasible, suggestions come from the children themselves. The boys of this division should be able to compete with the boys of their community in the hobby show—and win the prizes.

Outcomes.—A skillful teacher could teach almost all the numbers a mentally retarded child ever needs to know through woodwork activity. There are so many situations in which counting, multiplying, dividing, adding, and subtracting are needed. There is a constant need of measuring, computing, and comparing in every phase of woodwork;

figuring costs and making estimates give additional practical problems which need to be solved. The use of charts for outlines and directions, and the use of blue prints give reading opportunities, which are motivated by the need of knowing what they are all about. Pupils may look up references in newspapers and magazines for ideas and suggestions of things "for boys to make." Simple elementary science and geography can also be taught incidentally in connection with the woodwork activity.

Orderliness and neatness are both necessary to successful shop activity. These habits grow out of the good teaching of woodwork. The necessary sharing of tools furnishes the situation in which self-control, politeness, and cooperation may be developed. Thrift is nowhere more necessary than in the shop and can be very concretely taught.

There is little chance for bluff in making things with wood. An article is either "true" or it is not. A child learns the valuable lesson that he must be strictly honest in every phase of a job in order to get a good result. Moreover, in woodwork as in the other activities, perseverance is a virtue which gains its own reward. Woodwork helps to inculcate the habit of sticking at a task until it is finished and the habit of using time to an advantage. These habits grow from the nature of the activity and not through talking about them.

In conclusion, woodwork—one of the earliest manual training subjects to be introduced into the school curriculum—seems to hold its own in the interest of the children and in the value of the results. There is something wholesome about it in its appeal to the pupils and something very practical about the possibilities of its application to everyday life.

SUMMARY

1. Manual and prevocational experiences include all those fundamental activities of a manual type which help to make civilization what it is and are primarily concerned with food, clothing, and shelter.

2. There are so many forms and modifications of these fundamental activities that a wide choice is open, determined by the mental and chronological ages of the chil-

dren concerned, the training of the teaching personnel, available equipment, and environmental needs of the community.

3. If manual activities are to contribute to the aims of education for mentally retarded boys and girls, they must help to develop working habits and skills that contribute toward their ability to secure employment and to live as social beings.

4. The principle of unity running through the entire school program makes it desirable that manual activities be an integral part of the total experience centered about a common theme of interest.

5. Manual activities need to be carefully graded, providing for a continuous progression from simple to more complex processes.

SUGGESTIONS FOR READING

BECHDOLT, JOHN E. Modern handy book for boys. Garden City, New York, Garden City publishing company, 1935. 432 p.

Manual activities of various types are discussed in this book, including engraving, molding, puppetry, and other highly varied phases of the field. Suggestions are given for integrating the activities through a coordinated project.

BOLLINGER, JOSEPH W. Elementary wrought iron. Milwaukee, Bruce publishing company, 1930. 139 p.

Written from the standpoint of a general metal shop "in which a number of metal-working activities are represented." The author has included projects of particular value and interest in both home and school. Illustrated.

CAVE, EDNA S. Craftwork. New York, Century company, 1929. 267 p.

Describes how to make things for sale in gift shops or for use in the home. Plans are clearly presented and many of them are simple enough for retarded children to follow.

COLLINS, ARCHIE F. Making things for fun. New York, D. Appleton–Century company, inc., 1934. 282 p.

Paper, cardboard, and wood are the media used for suggesting various types of hand work suited to both younger and older children.

HARRIS, FLORENCE LA GANKE, *and* HUSTON, HAZEL H. Home economics omnibus. Boston, Little, Brown and company, 1935. 617 p.

A comprehensive textbook covering all phases of home economics, centered about the girl's life and experiences in the home. Although the book is written for senior high schools, it furnishes much excellent material which can be adapted to the needs of adolescent girls of retarded mentality. Bibliographies.

LEHMANN, HERBERT G. Shop projects in electricity. New York, American book company, 1934. 190 p.

Simple projects in electricity are outlined which meet practical needs of home and shop.

PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA. Handcraft for home, school, playground, and summer camp. New York, Playground and recreation association, 1930. 79 p.

Gives full-size patterns and directions for carrying on 118 different projects in hand work. Suited to children of different ages. Among the articles suggested are cardboard and wooden doll furniture, lanterns, kites, boats, bird houses, paper dolls, etc.

SHAVER, RICHARD. Furniture boys like to build. St. Paul, Minn., Bruce publishing company, 1931. 216 p.

Various types of projects are graded according to the ability of the pupils.

SIEPERT, ALBERT F. Bird houses boys can build. Peoria, Ill., Manual arts press, 1926. 64 p.

Directions are given for building different kinds of bird houses.

TIPPETT, JAMES S. Toys and toy makers. New York, Harper and brothers, 1931. 144 p.

Makes suggestions and gives directions for constructing various types of toys.

VAN CLEVE, KATE. Hand loom weaving for amateurs. Boston, Mass., The Beacon press, inc., 1935. 122 p. illus. (The Beacon handicraft series.)

A manual of directions for creative work in weaving, with instructions clearly given and materials and tools of minimum cost.

NOTE.—See also references of comprehensive scope listed in chapters 2 and 3.

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CHAPTER 11: SPECIAL PROBLEMS OF THE RESIDENTIAL SCHOOL

THE PLACE in which a child is being educated does not affect the general philosophy and objectives underlying his education. His own nature, his probable destiny, and the social milieu in which he is to play his part are rather the determining factors. Hence what has been said in the foregoing chapters concerning curriculum adjustment applies to mentally retarded children everywhere. The fact of retardation is common to them all, whether they are enrolled in day schools or in residential schools; in public schools or in private schools. And the fact of retardation must be met by an adjustment of curriculum which is common to all, subject only to those variations which arise as the result of the successive levels of chronological and mental development. We have been prone to emphasize the differences between so-called institutional schools and day schools and to forget their similarities. The child of 60 IQ who, because of some complication, leaves the home community to enter a residential school does not by reason of that change of residence alter his intellectual status or his educational needs and abilities. Other factors have entered the picture which reveal the need of continuous supervision on the basis of a 24-hour day and a 365-day year, but his capacity for learning remains the same. What is good educational content for him in one place should be satisfactory in the other. The method that is successful in one place should be successful in the other. It is suggested, therefore, that as the special problems of the residential school are considered in this chapter, they should not be permitted to overshadow the problems that are the same for all schools and classes for retarded children.

It should be recognized that not all inmates of many State or private institutions for the feeble-minded attend the school sessions conducted as part of the institutional life. Those children who are mentally too deficient to profit by school instruction are not included in the consideration of this bulletin; neither should it apply to those who are physically adults of middle age or beyond, but who are mentally still children. Some of these latter have been taught to perform useful tasks about the institution which represent the realization of their maximum capacity. But they are not in daily attendance upon the school program, and they are not children within the age groups being considered here. Educable children between the ages of 6 and 16 or 18 are the theme of this study, and theirs is the right of regular systematic instruction wherever they are. In most institutions for the feeble-minded this is effected through the organization of a daily school program for them under the guidance of trained teachers.

That some special problems do exist in residential schools is obvious. The very nature of the institution is bound to produce situations not known in the day schools, but these do not necessarily militate against the application of sound principles of curriculum adjustment. In fact, some of them, as pointed out in the following paragraphs, promote rather than hinder the program as outlined in previous chapters. It should be remembered throughout that "residential schools" include schools of all sizes, representing all types of support and administration. The little private school conducted in a home for 20 children and the large State institution with 2,000 inmates are equally concerned with this problem of curriculum adjustment.

CONTINUOUS SUPERVISION AND CONTROL

The control of the residential school over its pupils extends through 24 hours of the day and 365 days of the year. The continuous supervision that obtains there cannot be exercised in day schools because of the very limitations of time at the disposal of the latter. Therefore the possibilities in a residential school of an integrated program in which educational and social values are combined go far beyond

the limits achieved by the day school. Through the use of units of experience classroom activities can be coordinated with activities carried on in the cottage, in the kitchen, in the dining room, and in other phases of institutional life. Experiences during out-of-school hours can become the subject matter of reading, writing, numbers, and language, to an extent not known in the day school. Cottage life gives the best possible opportunity to develop desirable personal and social habits which in turn can become the theme of discussion in the classroom. Social, industrial, academic, and physical development of the child can proceed hand in hand with one another through a complete practical integration of his experience during a 24-hour day and during every season of the year.

SELECTION OF GROUP

The pupils of a residential school are a selected group. Because of environmental situations, extreme mental deficiency, or social conflict, they have not succeeded in making adjustment to community life. The curriculum must therefore be organized to meet the peculiar needs of the respective types. Those who have been assigned to the residential school because of undesirable home or community environment can, if they are persons of sufficient intelligence to accept needed training, be prepared to return to the community later under more favorable environmental conditions. Those who are too deficient ever to return to the community must be prepared to take their places in institutional life. Those who are in the institution because of the addition of behavior complications to low intelligence must be carefully studied with reference to their possibilities for satisfactory social adjustment. Some will no doubt be able to go back to the community. Others will need to remain in the institution indefinitely and will need to be trained accordingly.

This training for institutional life involves preparation for usefulness in line with the activities necessary for the maintenance of the institution. Thus the content of the manual and prevocational experiences offered to children during their school years will logically depend upon the

opportunities that will later be available for their application. In the larger institutions girls will be able to render their services in the household, in the sewing and weaving rooms, in the hairdressing shop, and in the dining room. Boys will contribute to the maintenance of the institution through simple carpentry, shoe cobbling, painting, barbering, printing, garden, and farm work. In every case the probable future of the child as a permanent resident of the institution will color the training he receives in industrial activities.

PSYCHOTICS AND DEFECTIVE DELINQUENTS

Most serious among behavior problems found in the residential school are those characterizing the psychotic and the delinquent. Mentally deficient children who show definite symptoms of psychosis as well as those who are known as defective delinquents are likely to disrupt any curricular program. They need a highly specialized type of training, probably in a separate institution, or at least in a separate unit quite apart from the school for the mentally deficient. As long as they remain unclassified in a large institution for the mentally deficient, they complicate the school program by demanding much individual attention and even by demoralizing the general atmosphere of the schoolroom. Because the residential school is likely to receive these very difficult cases, it must make the needed provision for careful diagnosis, treatment, and individual instruction of each one in accordance with the needs revealed.

SERVICE TO ALL AGE GROUPS

The fact that persons of all ages are resident in many of the institutions for the feeble-minded makes imperative an arrangement which will give to the children enrolled the opportunity to work in groups *of children*, just as they would do in day schools. This places a responsibility upon these residential schools for careful classification and assignment of each child to classroom work, as well as a prevention of undue contact with older feeble-minded inmates. The proper organization of a school within the large institutional life which includes service to preschool children, bedridden patients, physically mature adults, and old people

Courtesy of Walter E. Fernald State School, Waverley, Mass.

WIELDING THE PAINT BRUSH TO DECORATE THE TOYS THEY HAVE MADE.

Courtesy of La Crosse, Wis., Public Schools.

HARD AT WORK ON "MAN-SIZE" PROJECTS

is not an easy matter. Each child's right must be safeguarded to live his life as a child with other children.

DIFFERENTIATION OF CURRICULUM[1]

The problem which the day school faces in the adaptation of curriculum content and method to meet the needs of various age and ability levels is still further accentuated in the residential school. We find here many more children with a mental age below 6 years than in the day school, and at the same time there are all degrees of subnormal intelligence even up to high-moron level. Therefore the process of classification must be carried on not only in separating children of school age from adults and from children of preschool age, but also in making extensive application of the principles of curriculum adaptation to the various groups of children of school age.

No detailed consideration will here be given to the methods of adaptation, since these have been discussed in previous chapters. The groups that have been considered are: (1) Those educable children who are mentally below the level ordinarily prescribed for entrance into the first grade; (2) preadolescent children who are mentally 6 years old or older; (3) adolescents of a mental level lower than 9 years; (4) adolescents of a mental level of 9 years or more. The task of the residential school is to add to the educational service for these respective groups, which is in essence the same as in the day school, the continuous social supervision and training made necessary by complications of circumstances.

RESEARCH FUNCTION

The residential school is peculiarly suited to the use of experimental methods and research. Many of them are under the direction of medical men or other highly trained persons who are especially interested in the fields of pathology, biology, and eugenics, as applied to the mentally deficient. In some, there are clinical laboratories which have been the battleground of intensive research,

[1] See also chapter 3 on "Differentiation of Curriculum According to Age and Ability Levels."

designed to increase knowledge and to develop possibilities of training. The activities of the classroom may make a valuable contribution to this program of research through the use and evaluation of experimental methods of instruction. It is only through controlled experimentation that we can ultimately prove the value of our procedures, and it is to the scientific laboratories of residential schools that we must look for a large contribution in certain phases of needed investigation.

SUMMARY

1. The education of mentally retarded children is governed by the same philosophy and objectives regardless of where they are educated. Curriculum content and methods in residential schools should in general be the same as those used in day schools, with whatever adjustment may be necessary to meet the peculiar problems of the institution.

2. There are certain conditions peculiar to residential schools which need to be considered in formulating a curricular program in such schools. Chief among these are the continuous control of the school over the children enrolled; the selective nature of the group assigned to residential schools; complications arising from the presence of psychotics and defective delinquents; the residence in the institution of persons of all ages; and the special opportunities open for research and experimentation.

3. The fact that the residential school exercises 24-hour supervision through the year makes possible the realization of an integrated program of life experience through which classroom and extraclassroom activities can be coordinated in the form of experience units even more closely than in the day school.

4. The predominance of serious problems in the residential school that have proved incapable of adjustment in the community produces complications that make necessary the most careful diagnosis and treatment of each individual case.

5. The residence in many institutions of persons of all ages, from the preschool child to the old man or woman

necessitates a plan of classification of inmates which will give to each child of school age his right to learn along with other children of his approximate age and ability.

6. The residential school offers abundant opportunity for scientific research directed toward the improvement of curriculum practice.

SUGGESTIONS FOR READING

BERRY, RICHARD J. A., *and* GORDON, R. G. The mental defective: A problem in social inefficiency. New York, McGraw-Hill book company, 1931. 146 p.

(See chapter 1.)

DAVIES, STANLEY P. Social control of the mentally deficient. New York, Thomas Y. Crowell company, 1930. 389 p.

Presents mental deficiency in its social rather than its clinical aspects, with particular reference to the responsibility of society to meet the problem. Discusses the functions, activities, and achievements of institutions caring for mental defectives.

ITARD, JEAN-MARC-GASPARD. The wild boy of Aveyron. New York, The Century company, 1932. 104 p. (Tr. by George and Muriel Humphrey.)

This is the first English translation of an original account by Itard of his efforts to educate a feeble-minded child. "The wild boy of Aveyron" was found in the woods, apparently "a degraded being, human only in shape." Itard undertook to instruct him with the hope of raising his level of understanding and intelligence. In this account he describes the methods which he pursued and the results which he secured.

CHAPTER 12: THE STATE IN RELATION TO THE CURRICULUM

LEADERSHIP in the development and maintenance of appropriate and adequate public-school curricula is a definitely recognized responsibility of the State. This responsibility is nowhere more important than in the development of curricula for new educational endeavors, such as the education of mentally retarded children. The functions of the State in this field are being defined more and more clearly, as psychological and educational research reveals the relationship between mental retardation and educational opportunities that will foster the development of happily adjusted and useful lives, with or without supervision.

The functions of the State in relation to the curriculum for the mentally retarded may be classified as follows:

1. Directing educational surveys to determine the extent and the nature of the problem and submitting curricular recommendations to school officials.
2. Establishing clearly defined objectives for the education of the several types of mentally retarded children.
3. Educating the public, both lay and professional, as to the curricular needs of these children.
4. Sponsoring psychological clinics and child study bureaus to examine and classify the mentally retarded and to make recommendations as to appropriate education.
5. Prescribing State standards for the education of the mentally retarded and assisting in the development and maintenance of such standards.
6. Coordinating and influencing the activities of the several agencies in the State concerned with the establishment and maintenance of an adequate curriculum for mentally retarded children.

These phases of the State's responsibilities will be discussed in order.

DIRECTING EDUCATIONAL SURVEYS

Three types of educational surveys are fundamental to a realization of the curricular needs of the mentally retarded and the organization and maintenance of a suitable educational program for them:

1. A State-wide survey and study of age-grade tables, of age-progress records, of reports of medical inspectors on gravely retarded pupils in the several school districts of the State, and of other pertinent data, to determine the prevalence of educationally maladjusted youth in the State, the nature and cause of such retardation insofar as this is possible, and to make definite recommendations as to suitable educational provisions for them in the public schools or in the residential schools of the State.

One of the greatest responsibilities of the State at present is to enlighten its educators as to the prevalence of mentally retarded pupils and the injustice quite universally perpetrated against them in permitting them to become either laggards in the grades or in passing them "on age" through the grades with no attempt to offer them an educational opportunity in conformity with their actual needs. Should the State continue to ignore this responsibility, the price to be paid by taxpayers for the inevitable social inadequacies and delinquencies will far exceed the cost of a suitable educational program for them.

2. A survey to determine the prevalence of the mentally deficient inappropriately committed to publicly and privately controlled correctional institutions.

The tendency to commit mentally deficient juvenile delinquents to correctional institutions, rather than to institutions for the feeble-minded, places upon the State a responsibility to ascertain, through surveys and research, the extent to which this practice is prevalent and to evaluate the educational systems in these institutions in terms of individual fitness. Many pupils fail in maintaining satisfactory life adjustments through failure of the public schools to recognize individual differences and to supply the necessary educational adaptations. Continued disregard of these factors in the educational programs of correctional schools will retard rather than promote socially conformed behavior. Mentally deficient boys and girls who

have become delinquent should not be committed to reformatories or to schools of correction, since by definition extreme mental deficiency, or feeble-mindedness, connotes social incompetency, and therefore represents the need for custodial care in a school for the mentally deficient or in a separate institution.

3. Surveys to investigate the occupational histories of those who are known to be mentally retarded, particularly former special-class pupils, looking toward an evaluation and a modification of the curriculum in accordance with findings.

Such surveys will indicate whether training in occupational skills is desirable in certain localities or for some types of pupils just before they leave school. They may also show whether socially acceptable habits and attitudes of work can be developed more readily through exposure to a wide variety of manual experiences or through the acquisition of specific occupational skills.

ESTABLISHING CLEARLY DEFINED OBJECTIVES

Uniformity of curricular procedure throughout the State necessitates the cooperation of the several State agencies concerned and the establishment, by these agencies, of clearly defined educational objectives for the mentally retarded. The results of the surveys recommended above will show how far actual practice is failing to reach these objectives.

EDUCATING THE PUBLIC

As there can be no real progress in educating the mentally retarded without public approbation and support, the public, both lay and professional, must be made cognizant not only of the danger of neglecting to provide proper educational facilities for them, but also of the value of developing desirable habits, attitudes, knowledges, and skills through a curriculum that minimizes defects and capitalizes assets. There are two avenues of approach to this goal:

1. Through State publications, general in character for the general public and specific and technical in character for school administrators and teachers.
2. Through public meetings, demonstrations, and exhibitions, such as:

a. Annual State-wide conferences on the education of exceptional children, with section meetings for the discussion of the curricular needs of the mentally retarded.

b. Regional conferences consisting of:

(1) A morning session to demonstrate approved educational procedure for the mentally retarded, the demonstration being a replica of a special-class day, with the exception that teaching periods are shortened to cover the activities of two sessions in one.

(2) An afternoon session conducted as an open forum for a discussion of the morning program and related administrative problems.

All school administrators, special-class teachers, medical inspectors, school nurses, social workers, service-club members, and interested lay people within an area of easy access to the special class selected for the demonstration should be eligible to attend these conferences, the aims of which are: (*a*) To bring the special-class teachers of the selected area into closer personal contact, in order that they may discuss mutual problems and exchange ideas; (*b*) to familiarize superintendents, school officials, and teachers with special-class curricular standards and teaching methods; (*c*) to show to the public the value as well as the necessity of special classes for the mentally handicapped.

(3) State and local parent-teacher meetings, and other meetings of an educational nature, interested in promoting the welfare of mentally retarded children.

(4) Displays and pupil demonstrations of processes involved in handicrafts suitable for the mentally retarded at local, county, and State educational exhibitions, bringing some of the curricular needs of the mentally retarded to the attention of thousands who otherwise would have been unfamiliar with them.[1]

SPONSORING PSYCHOLOGICAL CLINICS

The services of psychological clinics and child study bureaus, conforming to State standards, should be extended

[1] In Pennsylvania the education of the mentally and physically handicapped is annually demonstrated at a State farm show visited by 300,000 people from many parts of the United States and Canada.

to all parts of the State, particularly to remote and sparsely settled districts that are financially unable to employ a psychologist or to provide psychological examinations. Where such clinics are now operating under the jurisdiction of State agencies, cooperation to insure coordination of effort and uniformity of procedure is desirable. In one State, plans are now being made to organize a child-study department at each State teachers college which is to offer psychological service to the school districts within its geographical area. In this way, a psychological examination, diagnosis, and recommendation will be available for every mentally retarded child in the remote areas of the State. Certification requirements for school psychologists and psychological examiners should be prescribed by the State.

PRESCRIBING STATE STANDARDS

Mandatory legislation in a number of States requires the organization of special classes in the public schools for the "gravely retarded" when 10 or more such pupils in the district are considered "fit subjects" for special education. In rural schools and suburban school districts in which a small school enrollment does not warrant the organization of a special class for the mentally deficient, the problem may be solved (1) by establishing a joint special class (the cost being prorated to the districts on a per capita basis or otherwise); (2) by establishing a special class in a consolidated school; (3) by inaugurating special individualized programs for such pupils; or (4) in very serious cases, by transferring them to a residential school. The State department of public instruction should aid rural teachers to recognize and to adapt instruction to the needs of such mentally retarded pupils through State bulletins on the subject, lecture courses, supervisory visits, and free or loaned instructional materials.

Complete recognition of the State's responsibility under a legal mandate implies more than segregating the mentally retarded into special classes with the primary motive of relieving regular grades of maladjusted pupils, for such action would be merely a gesture in the direction of meeting the requirements of the law. To give meaning and vitality

to the program, the State should prescribe standards regulating the following factors related to special classes:

Selection of classroom.—Classrooms should meet State standards for light, area, floor space, air space, heat, and ventilation. Failure to appreciate the scope of educational activities for the mentally retarded and their need for a healthful environment has resulted in the assignment of special classes to rooms undesirably located, poorly lighted, heated, and ventilated, and quite inadequate in floor area. Plans and specifications for model special classrooms supplied by the State will promote better classroom accommodations and improved programs of study.

Size of class.—As the effectiveness of the curriculum will be minimized by an enrollment that interferes with the required individualized instruction, the maximum enrollment for the several types of mental retardation should be regulated by the State.

Equipment.—Adequate equipment for the special classroom is fundamental to a successful administration of the curriculum. Therefore, the State should prescribe a minimum equipment for instruction, including domestic and industrial apparatus, and ample facilities for storing tools and raw materials, for keeping pupils' unfinished handwork, and for displaying finished articles.

Constitution of class.—The curriculum of a special class for the mentally retarded cannot be fairly administered if the pupil personnel is not properly homogeneous. The State should specify the types and ages of mentally retarded pupils eligible for enrollment in a special class.

Conditions of admission.—The proper selection of mentally retarded pupils based on a thorough psychological examination is essential. The policy of waiting until a child is "gravely retarded" (3 or more years) with the sense of failure strongly ingrained, should be avoided. The process of selection should begin when pupils enter the kindergarten or first grade. Through this procedure repetition of grades with the concomitant acquisition of undesirable habits and attitudes, such as discouragement, embarrassment, resentment, inattention, idleness, truancy, and delinquency will be minimized. Early selection and assignment of mentally

retarded pupils will afford the maximum amount of time for the development of desirable habits. They should, however, be protected against improper placement. The Department of Public Instruction should cooperate with the Welfare Department and with other State and private organizations to this end.

Qualifications of teachers.—Although teacher training is one of the major responsibilities of the State, comparatively few States have organized training courses for teachers of the mentally handicapped. Two phases of this problem demand consideration: The training of new teachers and the training of teachers in service.

A satisfactory solution of the first phase of this problem requires:

(*a*) Inauguration of training courses in State teachers' colleges and normal schools combined with facilities for observation and practice teaching in an approved special class. Such courses should parallel State requirements for certification and will promote greater uniformity than now obtains in special classroom procedures.

(*b*) Selection of suitable candidates for such training. As certain personality characteristics and natural aptitudes are essential to successful special-class teaching, only those having the desired personality qualifications should be permitted to register. Selection of experienced, capable primary teachers, having natural aptitudes for practical arts and music and more than ordinary interest in health and physical education, will guarantee in a large measure realization of the educational objectives for the mentally retarded.

The second phase of this problem concerns one of the major functions of the State department of public instruction. Training teachers in service may be accomplished, in part at least, through:

(*a*) Guidance in the selection of extension and summer school courses, if certification requirements have not been met or if additional college courses seem desirable.

(*b*) Demonstration lessons and teaching suggestions by State and local supervisors.

(*c*) Demonstrations of special class teaching at regional conferences in special education.

(*d*) Discussions of teaching problems at national, State, and local educational meetings.

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(*e*) Distribution of bulletins and handbooks on the education of the mentally retarded prepared by the State and Federal Governments, including bibliographies of selected references in this field.

(*f*) Circulation of portfolios, containing descriptions of units of experience, together with samples of reading booklets, teaching devices, and correlated seat work, to be used as suggestive material and not for duplication, as each project or unit of experience should be a new creation replete with local color.

(*g*) Instruction by experts and agents of commercial houses in new manual activities or handicrafts, arranged by the supervisor, for selected groups of special teachers.

The educational program.—Standards governing the educational program for the mentally retarded should be formulated by the State. The content of instruction and curricular differentiation according to levels of mental ability should evolve from actual classroom experimentation of sufficient successful duration to justify embodiment in the curriculum. They should represent the composite experiences of the most successful special-class teachers in the State. The curriculum should always remain flexible to permit desirable modification or change.

Teacher initiative should be encouraged in the development of suitable "units of experience" and in the keeping of accurate records of all correlated and motivated instruction utilized, in order that it may be assembled and distributed by a central agency as suggestive teaching material. A suggestive daily program, apportioning periods of time to the several activities and embodying psychological principles, promoting effective teaching situations, should be prepared by the State and distributed to teachers of the mentally retarded.

Certification of teachers.—The professional courses and training required for certification of teachers of the mentally retarded should be fixed by the State and adjusted from time to time, as warranted by changing educational conditions.

State subsidy.—To promote the organization of special classes for the mentally retarded in the public schools, a State subsidy should be appropriated to school districts maintaining the curricular standards prescribed for such classes.

Supervisory program.—If the State standards suggested above are to be effectively applied, the services of a well-trained supervisor are indispensable. Such a person should know from both training and experience the general principles of education as applicable to all children in the elementary grades, and should, of course, have additional training and successful experience in the education of retarded children. Only with such a background can he give to the teachers throughout the State the assistance they need.

COORDINATING THE ACTIVITIES

The curricular needs of the mentally retarded are the same regardless of the organization or authority charged with their education—city or rural school systems, elementary special classes, special prevocational or vocational schools, residential schools, or correctional institutions. The responsibility of the State to supply these curricular needs through its several agents remains unchanged regardless of where the mentally retarded may be found. Therefore, under leadership of the State, there should be unity of effort in promoting the educational welfare of such children in the State through the cooperation of all departments, organizations, and agencies dealing with the problem.

The State should, through this cooperative relationship and through its supervisory program:

1. Direct and control the enumeration, classification, and placement of the mentally retarded.
2. Guide and direct the development of adequate curricular programs and teaching materials.
3. Prepare same for distribution to all teachers of the mentally retarded.
4. Stimulate teachers to the attainment of higher educational achievements by the mentally retarded, particularly along occupational lines.
5. Encourage teachers to evaluate continually the daily needs of the mentally retarded and to adapt the curriculum accordingly.

In accepting and carrying out all the responsibilities as outlined above, the State will be preventing the mentally retarded from becoming totally dependent or delinquent

members of society. But, more than this, it will be providing an equalized educational opportunity for all, intelligently adapted to individual needs, that will help each child to learn how to make a constructive contribution through self-help, self-respect, and self-control, in keeping with his maximum capabilities.

SUGGESTIONS FOR READING

MARTENS, ELISE H. Organization for exceptional children within State departments of education. Washington, D. C., Government printing office, 1933. 35 p. (U. S. Office of education, Pamphlet no. 42.)

Analyzes the plans of organization existing in State departments of education in which a special division or bureau is responsible for the education of exceptional children. Emphasizes the essentials of such a program.

Supplemented by eight mimeographed circulars dealing with specific aspects of the problem.

MASSACHUSETTS. Manual for special classes. Boston, Massachusetts, State Department of Education, Bulletin whole number 244, 1932, no. 2. 58 p.

Gives regulations for the establishment of special classes for retarded children, suggestions for their organization and administration, and suggested items for curriculum content. Prepared by and designed for special class teachers in Massachusetts.

PENNSYLVANIA. STATE DEPARTMENT OF PUBLIC INSTRUCTION. Organization and administration of special-education classes for the orthogenic backward. Harrisburg, Pa., State department of public instruction, 1935. 91 p. (Bulletin 85.)

Handbook describing the program for mentally deficient children in the public schools of Pennsylvania. Includes regulations issued by the State department of public instruction, suggestions for daily programs, time allotments, and other features of the work.

APPENDIX A: SUGGESTED ACTIVITIES FOR UNIT ON THE HOME, OUTLINED FOR CHILDREN OF PREPRIMARY MENTAL DEVELOPMENT

NOTE.—A similar outline may be used for planning units on the farm, the circus, the store, holidays, and seasonal interests. All activities must be carefully directed and preceded by discussion of their content. Age in all cases refers to mental age.

DRAWING

Use large colored chalk at blackboard or easel, or small crayons at seat

NURSERY AGE

Activity	Related sense training
Color and draw father, mother, baby. Draw bed and chair for baby. Draw house for mother. Draw mother's dishes. Draw fruits and vegetables. Draw some toys for baby, as ball. Draw a house for father.	Size. Shape.
KINDERGARTEN AGE	
The above can be elaborated upon, as: Draw a red house with 2 windows and 1 door. Draw 2 brown beds.	Size. Shape. Position. Color.

CUTTING

Use paper or cardboard

NURSERY AGE

Activity		Related sense training
Paper	Cardboard	
Learn to handle scissors by cutting pieces of newspaper to be used for definite things, such as covering desks during pasting. Cut on heavy crayon lines: Strips. Circles. Squares. Drawings of home unit, a house.		Shape. Muscular sense.
KINDERGARTEN AGE		
Cut pictures of home unit from Sunday papers and magazines. Cut and classify pictures pertaining to home, as, mother pictures, furniture pictures. Cut freehand pictures for posters of home unit. Cut geometric figures.	Cut on penciled lines, strips, circles, and squares: (*a*) Clock faces. (*b*) Square houses. Cut kitchen, bedroom, living room, in box form.	Muscular sense. Touch. Size. Shape.

MATCHING

NURSERY AGE

Figure and form	Classification	Related sense training
Match figures of various forms, colors, and number; pieces of furniture; houses.		Shape. Color.
KINDERGARTEN AGE		
Match clocks; toy money. Use picture puzzles of rooms and home activities.	Classify pictures of home life, rooms, furniture, home duties, and other activities. Classify Mother Goose rhymes pertaining to the home: Jack and Jill, Miss Muffet, Polly Put the Kettle On, etc.	Size. Position. Muscular sense.

MODELING

Use plasticine or clay

NURSERY AGE

Plasticine	Clay	Related sense training
Model foods (fruits, vegetables); figures (mother, father, baby); houses; furniture (chair, bed, table).	Make gifts for mother, father, baby (bell, marble, paper weight).	Size. Shape.
KINDERGARTEN AGE		
Model figures to be used in illustrating stories as: "Gingerbread Boy." "Wee Wee Women." "Three Bears." Model furniture: Davenport, lamp, stove, sink, radio.	Make gifts (candlestick holder, flowerpot, spool holder). Make decorative articles for room (paper weights, book ends, novelties for library).	Size. Shape. Color.

OTHER HAND WORK

Sewing, woodwork, and miscellaneous

NURSERY AGE

Sewing	Woodwork	Miscellaneous	Related sense training
Make cheesecloth dust cloths with fringed edge. Sew cards on perforated pattern. Make oilcloth toys, stuffed, edged with over-and-over stitch or blanket stitch.	Use toys cut by older pupils: Sand, nail, color with water paint, crayola, or shellac.		Color. Shape. Size.

KINDERGARTEN AGE

Make simple doll quilt blocks. Weave rugs and hammocks on small frames. Weave in and out design on meshed dishcloths. Make gingham napkins with fringed edges. Make spool knitting; sew together for hot pad.	Make paper file with two squares of wood: Nail, color, and shellac.	Make cardboard jointed animals: Cut, color, and fasten together. Make spongex napkin rings. Model clay dishes: Paint and shellac.	Color. Shape. Size.

LIBRARY PERIOD

Activity	Related sense training
Dramatization: Child represents character. Plasticine figure represents character. Paper cutting mounted on sticks used as puppets. Group bulletin board: Cut pictures from magazines and arrange them on bulletin board. Later paste these in scrapbook stressing balance, subject matter, neatness. Make booklets for exchange with kindergarten and 1B. Print children's names for library cards in issuing books.	Touch. Muscular sense. Position.

APPENDIX B: AN EXAMPLE OF JUNIOR HIGH SCHOOL PROVISIONS FOR RETARDED PUPILS

IN A number of cities steps have been taken to organize groups of retarded children in the junior high school. Regardless of previous academic achievement, mentally retarded pupils are assigned to these groups when they reach the age of 13 or 14 years. Details of organization and curriculum differ, of course, in different cities. The following account represents a practice followed in Philadelphia, Pa., as told by the superintendent of schools of that city in a recently published article, which is here reproduced in part with his permission and the permission of the publishers of the magazine in which it appeared.[1]

The work described is carried on for children of somewhat higher academic intelligence than that which characterizes most of those enrolled in special classes for the retarded, but the principles on the basis of which the plan operates can be applied with necessary modifications to suit groups of lower ability as well.

The weekly program for backward pupils in several selected junior high schools of the city, as described by Superintendent Broome, is divided as follows:

	Periods
Practical arts	10
Problems of living	5
English	5
Literature and art	5
Physical and health education	5
Activities (clubs and guidance)	5
Total	35

These time allotments and the titles of the general divisions of subject-matter, remain constant throughout the

[1] Broome, Edwin C. Industrial arts and the problems of the maladjusted pupil. Industrial education magazine, 38: 15–17, January 1936.

seventh, eighth, and ninth years, but the content and treatment vary with the progress from grade to grade.

ACTIVITIES

Practical arts.—Ten periods each week are devoted to a greatly modified offering of shop work, drawing, and related subjects. The course includes appreciation of the complexity, beauty, and efficiency of mechanical devices and processes.

For the girls: Short intensive courses on the job-analysis basis. All units to be related to the larger job of homemaking and family life. Food selection, preparation, and service; sanitary practices in the care of food and general housekeeping; personal grooming, which includes care of hair, skin, hands, and feet, and the care and repair of clothing; washing, removing spots and stains, and ironing; the selection of materials for family use, and the fabrication of garments; the intelligent purchase of ready-to-wear garments, and of household equipment and furnishings; the choice, care, and use of labor-saving appliances; the careful use of money, and general budgetary considerations; the care, development, and welfare of infants and children; care of the sick; the study of the family and its relationships; the care and use of tools used in making simple household repairs; the care and use of electrical appliances; safety rules and practices.

For the boys: Acquaintance with and use of common tools; home repairs, and minor repairs on articles brought from home; care of tools and supplies; shop information; simple projects in wood, metal, and electricity; shop service construction (semicrude articles made in quantity for use in the school system); advanced projects for able pupils; informal mechanical drawing; instruction in plain cooking, and in the use of sewing implements; patching and repair of clothing; purchasing ready-to-wear garments, household equipment, and furnishings; the care and use of labor-saving appliances; general budgetary considerations; and the careful use of money.

To a considerable extent, it is provided that boys and girls each receive some instruction in the fields commonly reserved for the other sex.

Problems of living.—Practical citizenship of the home, the street, the occupation, the community; local government; recreational activities and opportunities; use of newspapers and magazines (sports, advertisements); discussion of current events; problems and conditions of labor; studies of occupations; elements of geography and history of Pennsylvania and the United States; food, clothing, and shelter; elements of environmental science; applied arithmetic, and common business practices.

English.—Emphasis on the mechanics of oral and silent reading (in an effort to raise the reading level); enunciation; oral English;

letter writing, spelling, vocabulary building; correction of the common errors of expression.

Literature and art.—For appreciation values, primarily.

Physical and health education.—Brief lessons on hygiene, personal and for the worker, followed by a program consisting largely of games, with some apparatus, track, and field work. Emphasis on posture.

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EDUCATION OF EXCEPTIONAL CHILDREN

Available Publications of the United States Office of Education

Order from the
Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

1. THE DEAF AND THE HARD-OF-HEARING IN THE OCCUPATIONAL WORLD. Bulletin, 1936, No. 13.
2. A GUIDE TO CURRICULUM FOR MENTALLY RETARDED CHILDREN. Bulletin, 1936, No. 11.
3. WHAT EVERY TEACHER SHOULD KNOW ABOUT THE PHYSICAL CONDITION OF HER PUPILS. Pamphlet No. 68. 5¢.
4. COORDINATION OF EFFORT FOR THE EDUCATION OF EXCEPTIONAL CHILDREN. Bulletin, 1935, No. 7. 10¢.
5. TEACHERS' PROBLEMS WITH EXCEPTIONAL CHILDREN:
   - Pamphlet No. 40, I. Blind and Partially Seeing Children. 5¢.
   - Pamphlet No. 41, II. Gifted Children. 5¢.
   - Pamphlet No. 49, III. Mentally Retarded Children. 5¢.
   - Pamphlet No. 54, IV. Deaf and Hard-of-Hearing Children. 5¢.
   - Pamphlet No. 55, V. Crippled Children. 5¢.
   - Pamphlet No. 56, VI. Children of Lowered Vitality. 5¢.
6. EDUCATION OF EXCEPTIONAL CHILDREN:
   - Bulletin, 1933, No. 2, Biennial Survey of Education in the United States, 1930-32. Chapter VI. 10¢.
   - Bulletin, 1931, No. 20, Vol. I. Biennial Survey of Education in the United States, 1928-30. Chapter XI. 10¢.
7. ORGANIZATION FOR EXCEPTIONAL CHILDREN WITHIN STATE DEPARTMENTS OF EDUCATION. Pamphlet No. 42. 5¢.
8. GROUP ACTIVITIES FOR MENTALLY RETARDED CHILDREN. A Symposium. Bulletin, 1933, No. 7. 20¢.
9. ADJUSTMENT OF BEHAVIOR PROBLEMS OF SCHOOL CHILDREN. Bulletin, 1932, No. 18. 10¢.
10. PARENTS' PROBLEMS WITH EXCEPTIONAL CHILDREN. Bulletin, 1932, No. 14. 10¢.
11. THE SPEECH-DEFECTIVE SCHOOL CHILD. Bulletin, 1931, No. 7. 10¢.
12. SPEECH DEFECTS AND THEIR CORRECTION. (For parents, teachers, and pupils.) Pamphlet No. 22. 5¢.
13. SCHOOLS AND CLASSES FOR DELICATE CHILDREN. Bulletin, 1930, No. 22. 20¢.
14. THE HARD-OF-HEARING CHILD. School Health Studies, No. 13. 5¢.