THE PSYCHOLOGY
SUBNORMAL CHILDREN

BY

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IN THE EDUCATIONAL FIELD
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"The influences of the environment are differential, the product varying not only in accord with the environmental force itself, but also in accord with the original nature upon which it operates. We may even expect that education will be doubly effective, once society recognizes the advantages given to some and denied to others by heredity. That men have different amounts of capacity does not imply any the less advantage from or need of wise investment." — Edward Lee Thorndike.
PREFACE

With the growth of the movement to establish special classes for children who are subnormal in intelligence there has grown the demand for teachers who are trained in the psychology and education of such children. It is my hope that this volume, which consists of lectures given for some years past in Teachers College, Columbia University, may in a measure serve the purpose of such teachers. It is addressed primarily to them, rather than to clinicians, for whom the majority of books on this subject have been hitherto especially prepared. The discussion is, therefore, confined largely to the educational psychology of mentally deficient children, with relatively slight emphasis on methods of identification and diagnosis. The illustrative matter, also, relates to the achievement of defectives, rather than to their clinical features.

There has been a very conscientious effort to base the discussion soundly upon the results of psychological research, as set forth in the references appended. The lists of references are selected, not complete, except in the case of chapters on the psychology of development and learning. On these subjects the purpose has been to refer to all published experimental research bearing directly upon defectives. It is
unfortunately true that upon many points of interest for pedagogy no scientific data are available, and we have still to rely upon expert opinion and common observation.

It has been my experience that students who have mastered fundamental courses in educational psychology, and in the essentials of biology, profit much more by study of the material herein contained than do those who have not had such previous training. However, the aim has been to present the facts with a minimum of technicality.

As I formulated the book, I became increasingly conscious of what I owe to my years of professional association, first with Dr. M. G. Schlapp, Director of The Clearing House for Mental Defectives, The Post-Graduate Hospital, New York City, and later with Dr. Menas S. Gregory, Director of the Psychopathic and Alcoholic Services, Bellevue Hospital, New York City. Also, by way of that unconscious learning from each other which goes on among those long associated in clinical work, I have gained much from my colleagues at Bellevue Hospital, Dr. Melvin J. Taylor, Dr. Theron J. Vosburgh, Dr. E. J. Barnes, and Dr. Stephen P. Jewett.

My thanks are due to Dr. Paul Monroe for editorial supervision of my manuscript.

LETA S. HOLLINGWORTH.

TEACHERS COLLEGE,
COLUMBIA UNIVERSITY.
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CHAPTER IV
IDENTIFICATION

Identification of Defectives of Low Grade. It has always been easy for psychologists, physicians, and teachers to recognize idiots and low-grade imbeciles as subnormal. They have always been identified also by the populace at large, and have been described in popular terms as "half-witted," "half-baked," "daft," "foolish," "silly," "simple," "childish," or "young for their age." It is interesting too, in the light of modern psychology, to note how people in general have naively described the defective in terms of tests of knowing and doing. "Doesn't know enough to come in out of the rain"; "doesn't know beans"; "doesn't know straight up"; "can't even pound sand in a hole"; these are some of the expressions used to convey an idea of the mental condition of defective persons.

In the modern psychological method of measuring intelligence we find tests involving orientation (right, left), tests involving knowledge of what to do when it rains ("What's the thing to do if it is raining when you start to school?"); tests involving the recognition of objects of common experience, like beans,
(knife, key, penny, watch, pencil). The psychological method of identifying the subnormal is in a sense a scientific elaboration of these naïve methods of identification, just as the modern chemical laboratory is an outgrowth of folk-observations of the effects of certain ingredients upon others in combination.

The subnormal who can be identified as such by naïve methods are, however, only the very low grade, who are destined never to attain a mental age of over about six years. To return for a moment to our simple folk-tests,—a mentality of over six years does know beans, does know what to do in case of rain, does know straight up, and can pound sand in a hole. Thus naïve observation was and is inadequate for the recognition of all grades of mental defect above this low level. The majority of the defective escape detection by the populace at large.

Recognition of Milder Degrees of Subnormality. Defectives higher in the scale than those destined to the ultimate level of five or six years were formerly not recognized for what they are. Their education proceeded by the birch-rod, dunce-cap method. All teachers are familiar with old wood-cuts showing colonial schoolrooms, with the children sitting around the master, on wooden benches. Everyone will recall the inevitable dunce, sitting in the corner with his dunce-cap on. In the light of what we now know, we may venture the guess that under those colonial dunce-caps lurked many an IQ of 70 or less.
However, in those days no one was thought of as feeble-minded who could learn to write his name, read simple words, and "do sums." Those whom we now call morons and high-grade imbeciles were then regarded as "lazy," "bad," "ne'er-do-well," but as normal intellectually. Not psychological diagnosis, but corporal punishment, was the accepted procedure with regard to them. The defect was to be overcome by forcing the child to kneel on the sharp edge of a triangular rod, by application of the birch, and by the dunce-cap.

The colonial dunce, isolated in his corner, represents the rude beginnings of the modern special class. Only we no longer beat and torture him. We select him by psychological methods, and place him with his peers, under the care of a teacher especially trained to understand him, where he can learn those things which are suited to his capacities. But how is he to be selected with accuracy and justice, since to common observation the nature and extent of his defects are not apparent? The answer to this question involves a discussion of the psychological methods of measuring intelligence. No exhaustive or technical exposition of these methods can, however, be undertaken here, as the subject is sufficiently broad at the present time to require several volumes for its adequate treatment. Since teachers are not to be responsible for the correct identification of defectives, but only for the proper training of them, this
discussion will be limited to a brief general description of the methods of identification now in use.

The Necessity for Establishing a Scientific Method of Identification. It is not enough to obtain the personal judgment of those who are acquainted with a child, as to what his mental quality may be, any more than it is enough to ask them what may be his height, his weight, or the size of his feet. It is a matter of common knowledge that wide errors are made in judging height, and weight, even by very intelligent persons. No stock raiser would trust the personal judgment of a buyer to determine the weight of his stock at the market. No householder would trust the personal judgment of a grocer as to what constitutes a pound of rice or tea. The great fallibility of subjective judgments is recognized by the presence of scales in every market, and of yardsticks in every dry-goods store. Judgments of mental capacity are subject to much greater errors than are judgments of such qualities as height, weight, length, area, loudness, tint, and pitch. Yet human beings are willing to rely on personal judgment of mental traits, each of us priding himself that he is "a good judge of human nature," and believing himself to be gifted with some mysterious power of gauging mental qualities accurately!

In the specific case of teachers' judgments of their pupils several special fallacies enter in to produce wide errors. These will be recognized by nearly
every teacher as soon as they are pointed out. In the first place, teachers tend naturally to judge intelligence on the basis of success in school work, especially success in reading and arithmetic. This leads them into many errors, for success in school work depends on a number of factors, only one of which is intelligence. A bright child who has a special disability in reading or arithmetic, who is deaf or astigmatic, who is physically ill, may be rated low in school work, because all of these factors may reduce his efficiency. Also, a very young child who is doing work of a certain quality in a certain grade, may be rated as of equal intelligence with a much older child who is doing the same quality of work in the same grade.

There is a universal tendency among teachers to neglect the factor of age when judging the innate intelligence of pupils. It has been repeatedly shown that feeble-minded children are judged as normal by teachers under whom they are doing average work in a grade for which they are four or five years too old, by the age-grade norms. In the same way it has been shown that teachers judge as average children doing average work in a grade for which they are too young, by the age-grade norms.

An additional source of error is that the pupil is judged by appearance, manner, and dress, all of which may or may not be related to the child's intelligence. A dull child, who is well dressed, handsome, and well
trained in manners may be rated higher in some instances than a bright child who is ugly, or boisterous, or in rags.

It is apparent that it is necessary to have a means, first, of singling out intelligence from all the other factors which complicate efficiency in school work, and secondly, of measuring intelligence objectively, so that the personal equation may be eliminated as completely as possible.

Binet's Measuring Scale. We have already noted the fact that when in 1904 Binet was called upon to advise the educational authorities in Paris as to the segregation of the mentally defective children in the schools, he was obliged to reply that there existed at that time no scientific method of selection. Only the very lowest grades could be recognized with certainty, and these constitute a small part of the problem in the public schools.

For more than fifteen years Binet had worked in the psychological laboratory with mental tests, and in the analysis of mental processes. He knew fully the psychological factors which enter into subjective judgments to render them unreliable, and he knew also the scientific principles which underlie the formulation of objective criteria in psychological experimentation. Finally he succeeded in arranging a series of mental tests, some of which were so simple that three-year-olds could respond adequately to them, while others were sufficiently difficult to try
the abilities of adults, with many intermediate degrees of difficulty.

Psychologists had worked for more than twenty years with mental tests, and psychiatrists dealing with the insane had attempted to devise some method of approaching their patients by means of tests, before Binet undertook the formulation of his scale. These previous efforts had been unfruitful, because no one had combined the two basic ideas upon which Binet's scale was constructed. A few investigators had arranged tests in series, but had done it on the basis of "expert opinion." The investigator guessed which tests would be significant, and applied them according to his personal opinion. Other investigators realized that the value and significance of a test cannot be determined by guessing, and had tried out mental tests objectively, but had not hit upon the idea of constructing norms on the basis of mental age.

Binet made his arrangement of tests not on the basis of his own judgment of what would be easy and what would be difficult, but on the basis of objective experiment. Many tests were tried on children of all ages. In the course of this experimentation certain tests were rejected, others were devised, and finally each test selected was assigned a place in the scale, on the basis of the actual performance of the children themselves. In its first rough form the scale consisted merely of thirty tests arranged in an ap-
proximate order of difficulty. This was published in 1905. Three years later the scale was again presented, this time with the tests standardized in terms of mental age. Those tests which the average three-year-old can meet successfully were grouped under three years; those which the average four-year-old can meet successfully were grouped under four years, and so forth. Thus each test came to have a certain objective value, expressible in terms of the average intelligence of children of a given birthday age.

In 1911 Binet published a second revision of his scale, but his work was soon thereafter interrupted by death, and he was prevented from perfecting his idea. However, his published researches had been read by psychologists all over the civilized world, and others at once took up the task of perfecting and extending his scale. In the United States revisions of the scale were published by Dr. Goddard, Dr. Kuhlmann, Drs. Yerkes, Bridges, and Hardwick, and Dr. Terman. The two former performed the service of translating the scale, and of making minor adaptations to suit American children. The others have extended and revised the scale, and have introduced certain features of scoring which require comment here.

The Measuring Scale of Yerkes, Bridges, and Hardwick. In 1915 Yerkes, Bridges, and Hardwick published their measuring scale, revising to a considerable extent the tests of Binet by eliminating some
and introducing others of their own devising. The chief feature of this scale was, however, the use of a new method of scoring, the method of scoring by points instead of by years of mental age. Each test is assigned a value in points, according to this method, and the maximum number of points which it is possible to make is known. The score of a child thus consists of the number of points he can make.

It is thought by many competent psychologists that the method of scoring by points has advantages over the method of scoring by years of mental age, and that future developments in mental diagnosis will proceed in this direction. However, it is necessary to notice that in order to render the results intelligible in relation to the case of a given child, the points must always be translated back again into terms of mental age. It is necessary to know what is the normal number of points for four-year-olds, for five-year-olds, and so forth. The advantage of a scale having points as units is that by means of it curves of mental growth may be determined, in a way which is impossible by the use of scales in which the unit is years or months of mental age. For the identification of the defective children in any given community, at any given time, neither method has any advantage over the other, except that scores in terms of mental age are more easily communicated to those interested in the child's welfare, who are not professional psychologists.
Yerkes, Bridges, and Hardwick also introduced the intelligence coefficient, which is the figure obtained by dividing the number of points obtained in an examination, by the number of points obtained on the average. For example, if a child of eight years obtains a score of 20 points, whereas the average score of children of that age is 39 points, the intelligence coefficient of the child under consideration is 51. Such a measure had been suggested earlier, but had not been used in practice.

*The Stanford Revision of the Binet-Simon Measuring Scale.* The Stanford Scale is so named because the labor on it was done at Stanford University. It is the work of Dr. Terman and his collaborators. Binet’s scale in its original form was crude in many respects. It was standardized on only a few children, and those few were not wholly unselected. It did not measure intelligence above the eleven-year level. Directions for giving the tests were not standardized, and inasmuch as the directions in giving a test constitute a very important part of the test itself, this led to unreliable results. Binet did not provide any method for comparing the intellectual quality of a younger child with that of an older child. Obviously “two years retarded” means different things at different ages. A three-year-old who is two years retarded is a low grade defective, whereas a thirteen-year-old who is two years below the norms is merely dull. Thus some method of expressing the
intellectual quality as well as the intellectual status praesens is highly desirable.

The Stanford Scale remedies these defects of the original Binet Scale more nearly than does any other now available. It is standardized on a large number of children, selected as nearly as possible at random. It measures intelligence up to and including adult (so far as the average and the subnormal are concerned). Directions for giving the tests have been carefully standardized. Finally, the intelligence quotient is introduced as the expression of intellectual quality, with mental age as the expression of the intellectual status praesens.

A few further remarks concerning the intelligence quotient are necessary, in order that teachers may have a clear comprehension of this term, which is coming into such wide use, and which is so significant for their understanding of their pupils. The intelligence quotient, referred to in this book and generally as the IQ, is simply the ratio of actual age to mental age, the quotient obtained by dividing the latter by the former. For example, if a child eight years and no months old, measures at a mental age of ten years and two months on the scale, his IQ is 127. If a child of the same age measures eight years and no months, his IQ is 100. If another child of the same age measures four years no months, his IQ is 50. In grading children for school work, the intellectual status praesens, the mental age, is the important
consideration. In looking forward to determine what their future prospects may be, the important consideration is the IQ. (Its significance is obviously the same as the intelligence coefficient of Yerkes, Bridges, and Hardwick.)

Does the IQ tell us exactly what a child will be intellectually ten years hence? Or does the IQ change from year to year? We cannot answer this question positively now. No one has ever re-measured the same children year after year from early childhood to maturity. Such re-measurements as we have indicate that the IQ remains constant for the middle 50 percent of children; that the average child gains just a year in mental age each year he lives, until maturity is attained. In the case of subnormal children the indication is that the IQ becomes slightly lower as development proceeds. They fall gradually farther and farther behind the norms as time goes on. In the case of superior children no data have been made available, but from tests repeated on very superior children in the Horace Mann School the present writer believes that they become farther and farther removed from the norms in the direction of superiority as they develop, and that the IQ becomes gradually higher and higher,¹ as the IQ of the inferior becomes lower and lower.

In all this there is, unfortunately, no encourage-

¹ This surmise is confirmed by Dr. Terman in his recent work, *The Intelligence of School Children*. He notes the same tendency.
ment to believe that the IQ of a defective child may change for the better as he grows older. To those that have, more shall be given; while from those that have little, even the little that they have shall be taken away. Nature does not hold by the law of compensation, however much we might wish that she would.

*Psychographic Methods.* There is noticeable at present a movement toward the analysis of mental make-up, by the method of measuring the individual in various kinds of mental work, and by casting up the result for each test separately. Such a method yields a psychographic picture of the individual, showing in what kinds of work he is least capable, and in what kinds of work he is most capable, as well as revealing his general intelligence level. This method was proposed some years ago by William Stern, and has been developed somewhat by psychologists. Its full development and application are, however, matters for the future.

*Group Tests.* A serious difficulty in the use of a measuring scale such as those just described is that it can be applied to but one individual at a time. To sift out all the defectives from among ten thousand school children by giving each an individual examination is an exceedingly expensive process. When the psychologists in national service were confronted with the necessity of identifying the mentally deficient among the soldiers during the recent war, it was
clear that an individual examination could not be
given to each of the thousands of men who presented
themselves for duty. In this situation group tests
were devised, which could be given to many men at
the same time. Those who fell far below the norms
in these group tests were then selected for individual
examination.

The same method is applicable to school children,
and in future we shall undoubtedly see group tests
regularly in use as a preliminary means of identifying
the subnormal.

After the foregoing discussion a need may be felt
for some brief and simple definition of a mental test.
What is a mental test? The definition is most ap-
propriately formulated in terms of behavioristic
psychology, on the tenets of which mental tests are
founded. A mental test is a standard situation,
which provokes a response capable of qualitative
or quantitative interpretation. At present mental
tests have been devised only for intelligence. Other
aspects of mental life cannot yet be tested.

How a Diagnosis Is Made. A diagnosis of mental
deficiency is never made on the basis of an intelli-
gence examination alone. Intelligence tests are
strictly limited in their function to the determi-
ation of intelligence level at the time of examination.
By their use alone all forms of mental incompetence
would be confused. The temporary mental inade-
quacy of the manic-depressive, the deterioration of
the paretic, the inaccessibility of the dementia prae-
cox, and many other forms of mental disorder may
be mistaken for feeble-mindedness on the basis of
an intelligence test alone. Intelligence scales give
no information as to the underlying causes of the in-
competence which they reveal. Thus much addi-
tional information must be sought. No diagnosis
can be made without a developmental history, a
family history, a school history, a neurological exa-
imination, a sensory examination, and in some cases
data even beyond these.

In school systems which afford medical inspection,
school nurse, and a psychological clinic several indi-
viduals contribute to the diagnosis of a given case.
Those participating may be the teacher, the physi-
cian, the school nurse (or visiting teacher), and the
psychologist. Not many communities are thus ade-
quately equipped at present. Newark, New Jersey,
may be mentioned as a model. In that city the Di-
vision of Medical Inspection in the schools maintains
a psychological clinic, through which children sus-
pected of mental deficiency pass, to be examined for
the special schools. The teacher reports on the
school work and the conduct of the child. The
school nurse visits the home, and collects information
about family and personal history. The physician
makes a report on the health of the child. This in-
formation comes finally to the psychologist, who is
in charge of the psychological clinic. He confers
further if necessary with teacher, nurse, or physician, and makes the diagnosis on the evidence from his direct examination of the child, plus all the additional information which he receives. This plan was formulated and carried into execution by Dr. George J. Holmes, Supervisor of Medical Inspection in the schools of Newark. Other cities such as St. Louis, Cleveland, Los Angeles, Cincinnati, are similarly well equipped. Still other communities are partially equipped to care for the identification of subnormal children.

The Teacher's Part in Identification. The teacher's or supervisor's function is primarily and chiefly to organize and carry on the proper training of the children. However, in doing this he or she becomes aware of certain data which are of much interest in identification. In cases where group tests are not used, the teacher of the regular elementary grades is expected to note and report upon children who show symptoms of mental deficiency, and who are to be examined. The teacher or supervisor should observe the pupils, to report upon their work and conduct, and to consult with the psychologist on progress made under training.

The School Nurse's Duty. The school nurse, or visiting teacher, goes to the home, and tries to assist the parents in following out recommendations made for the welfare of the child. Frequently it becomes her function to collect data on family and personal
history, and to keep in touch with the family situation in general.

The Physician's Duty. The school physician should ascertain the physical condition of the mentally subnormal children, just as he ascertains the condition of all the other children in the school. He should report upon the general health of the child, with special reference to diseases such as syphilis, which are known to affect the nervous system. The medical inspection of subnormal children follows the same lines as the medical inspection of average and superior children. As Tredgold says, of medical and surgical treatment, "the principles are the same in these as in ordinary children." If any physical disability is present, it should be corrected, if it is corrigible. It is the function of the physician to determine the presence or absence of physical disorder, to prescribe treatment; and to report upon such conditions to the psychological clinic.

The Psychologist's Duty. The responsibility of the final diagnosis of mental deficiency rests upon the psychologist, or psychiatrist, who has been especially trained for his work in normal and abnormal psychology, and in neurology. It is his duty to make the mental examination. He should coördinate and interpret the various kinds of information, in coöperation with all others concerned, and should determine the mental status and quality of the child. His verdict will imply a certain kind of training for the child,
which depends in turn upon those who have the organization and conduct of education under their charge.

*The Growth of Psychological Clinics in the United States.* Over twenty years have elapsed since Dr. Lightner Witmer established the first psychological clinic in the United States, at the University of Pennsylvania. Dr. Witmer has told how this happened. A teacher came to the psychological laboratory, where Dr. Witmer was in charge, seeking help for a pupil who could not spell. "Her assumption was that psychology should be able to discover the cause of this deficiency and advise the means of removing it." Dr. Witmer applied himself to the problem, which the teacher thus set for him. At that time psychology had never attempted to discover the causes of chronic bad spelling, or the remedies for it. It appeared to Dr. Witmer that if psychology were worth anything to him or to others, it should be able to assist the efforts of the teacher in a retarded case of this kind.

Working out his methods of examination as he went, Dr. Witmer made a thorough study of this child, who was a fourteen-year-old boy. It was discovered that the important factor in the boy's difficulty was an eye defect. After this defect had been corrected the teacher and the psychologist worked together, to instruct the boy, "as though he were a mere beginner in the art of spelling and reading."
Other teachers approached this laboratory, and thus it came about that the first psychological clinic in this country was established as a result of the earnest demand of teachers for help in the solution of educational problems. It is in response to their increasing demands that psychological clinics have appeared all over the United States within the past decade.

The clinic at the University of Pennsylvania was established in the year 1896. In 1909 the demand for its services had become so great that regular daily clinics were instituted. All kinds of mental and moral deviation are handled, as is true of psychological clinics the country over. Mental deficiency is but one of the psychological problems which arise in the schools, though it is one of the largest problems.

Following the precedent of the University of Pennsylvania, many departments of psychology and education in universities have established psychological clinics. Sometimes they are called educational clinics, or psycho-educational clinics. As examples may be mentioned the Psychological Clinic at the State University of Ohio, the Psychological Clinic at the University of Indiana, the Educational Clinic at the College of the City of New York, the Psychological Clinic at the University of Texas, the Psychological Clinic at the University of Pittsburgh, and the Psychological Clinic at the University of Southern California.
In other instances the educational officers of a city or state have established a psychological clinic as a part of the public school system. Examples of this are found in the Psycho-Educational Clinic in St. Louis, the Psycho-Educational Clinic in Newark, the Psychological Clinic in Oakland, the Psychological Clinic in Los Angeles, the Vocation Bureau in Cincinnati, the Psychological Clinic in Cleveland, the Department of Child Study in Chicago, and numerous others.

In small towns and in rural districts the psychological work is best administered by the state, as is now done in Wisconsin, New Jersey, New York, and other states.

*The Future of the Psychological Clinic.* As the movement for special classes grows, the psychological clinic will grow with it. Individualized instruction calls for the scientific recognition of individual differences, which is the service that the psychologist has been trained to render.

It is sometimes objected that the clinic will be an added expense, which a given community cannot afford to shoulder. It must be remembered, however, that the community in that case continues to incur the expense of repetition in the grades, of truant officers, and of adolescents who are turned out of school at the age of fifteen or sixteen years, untrained, though hundreds of dollars have been spent in presenting unsuitable material which they could not
grasp. Ayres' figures showed that repeaters in the grades cost millions of dollars annually, all this money being spent in teaching over again material which cannot in many cases be grasped at all. In the long run the judgment of a community is bound to be that money invested in a psychological clinic is more useful than money invested in repetition, truancy, and industrial helplessness.

References


CHAPTER X

HOW DO THE MENTALLY DEFECTIVE LEARN?

The Learning Process. In Chapter V we showed that the feeble-minded differ from the normal and superior not in kind, but only in degree. Thus the nature of learning will be of the same kind in them as in ordinary children. It is not a part of the purpose of this book to present in full the psychology of the learning process. For these facts a standard text on educational psychology should be consulted. Briefly it may be stated that all behavior, both learned and unlearned, may be reduced in the last analysis to specific responses to given situations. We spend our days being stimulated by our environment and responding to it. The responses of which men and other animals are by original nature capable are instinctive, or unlearned. It is the task of education to modify and amplify these responses in such a way that the individual may become as well adapted as may be to the purposes of the social body of which he is a member. The extent to which education is effective varies greatly with individual differences in original nature, which were discussed in Chapter I. The psychology which underlies such
modification is, however, the same in kind for all animals, both brutes and men. A definite response is made over and over again to a given situation, and a bond is formed in the nervous system of the learner, so that when that situation is presented to him he makes that response. This is the principle of practice, upon which all learning depends. Its basis is physiological. The elements of the nervous system having acted in a certain way, tend more easily to act in that way again, (provided that the action be not followed by pain or discomfort). When the response through long practice comes very easily and quickly, we say that a habit has been formed.

The kinds and complexity of habits which an individual can form depend, of course, not only on practice, but also on the sensitivity and complexity of his nervous system. A baby of one year cannot form habits of reading and writing, because he is not as yet sensitive to the situation 'a white page containing numerous tiny black marks, each of which has a definite meaning peculiar to it.' Human beings learn that which they can learn according to the same general laws, but not all are capable of learning the same things, even with a maximum of practice.

_How Do the Feeble-Minded Compare with Normals of the Same Age?_ Some years ago, before any experimental study of the feeble-minded had been made, it was often affirmed that they are characterized by incapacity for sustained voluntary effort, by
lack of attention, in short by inability to learn. These conclusions came no doubt from general observation of the fact that compared with normal persons of the same age they are unable to profit by instruction.

This general observation was later borne out by experimental studies of feeble-minded children, as compared with normal children of their age, or with normal children in the same school grade. Figure 14 shows graphically the rate of learning of a subnormal school child, as compared with a normal member of his grade in school. It is noticeable that the curve for the subnormal child rises slowly, and never attains the goal finally attained by normal children, who are as old as he is.

*How Do the Feeble-Minded Compare with Normals of the Same Mental Age?* The comparison of the feeble-minded with normals of the same chronological age is not the only, nor yet the most fruitful method of gleaning the desired information about the learning processes of the former. Another method of analysis is to compare the learning of the feeble-minded with the learning of normal children of the same mental age. We know very well, both from common observation and from experiment, that a fifteen-year-old defective, with a mental age of eight years, cannot learn as a normal fifteen-year-old can. The question is, can he learn as well as, or better than, an average eight-year-old can?
Fig. 14.—Curves showing the course of learning in a defective child, and in a normal child, of equal birthday age. (From Strong. Reproduced by courtesy of The Psychological Bulletin.)
Dr. Woodrow studied this question, at the State School for the Feeble-Minded, in Faribault, Minnesota. A group of feeble-minded inmates, averaging a mental age of 8 years, 10 months was compared with a group of normal public school children, averaging 9 years, 1 month in age. (Both of these groups may be said to have been 9 years old mentally.) These children in both groups were of equal initial ability in the tasks which were set them, namely, sorting sticks into boxes, sorting colored pegs, cancelling letters, and cancelling geometrical forms.

These two groups, almost exactly equal in mental age, and in initial ability in the situations named, were given thirteen days of practice in sorting gun wads, on which were pasted labels bearing the printed outlines of simple geometrical forms. There were five different kinds of these labels, and wads bearing the same kind of label had to be sorted into the same box. It is easy to see that this task has many elements in common with simple factory operations.

After thirteen days of practice (consecutive except for Saturday and Sunday) the records of both the feeble-minded and the normal were scored, in order to compare the two groups in learning. The facts can be conveyed most clearly by presenting the complete table of results. The table shows the initial trial, the final trial, and the improvement (amount of learning) is given for each child, both
feeble-minded and normal, in terms of the number of wads correctly sorted. The percentage improvement is also given.

**The Absolute and Percentage Improvement of Each Child of Both Normal and Feeble-Minded Groups**

(Woodrow)

<table>
<thead>
<tr>
<th>Child</th>
<th>Feeble-Minded</th>
<th>Normal</th>
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<tbody>
<tr>
<td></td>
<td>Initial Trial</td>
<td>Final Trial</td>
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<tr>
<td>1</td>
<td>129</td>
<td>175</td>
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<td>20</td>
<td>114</td>
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<tr>
<td>Av.</td>
<td>121</td>
<td>175</td>
</tr>
</tbody>
</table>

It is worth while to dwell at some length upon this investigation, because the results of such an experiment are worth more than all the surmises and ex-
pressions of personal opinion that could be collected. The time has passed when educators were satisfied to base their procedure on dogmatic opinions. They are now seeking the basis of sound experimentation. The question whether feeble-minded children show the same improvement with practice as do normal children of the same mental age, is answered affirmatively in this experiment. They learn as much, and they learn at the same rate, as do the normal nine-year-old children. In actual (chronological) age the two groups were, of course, very different. The feeble-minded learners ranged from nineteen years to ten years, with an average age of thirteen years, eight months. The normal children ranged between ten years and eight years in actual age, with an average of nine years, one month.

The curves in Figure 15 present a graphic picture of the comparative performance of the two groups. They travel together, crossing and re-crossing each other from trial to trial.

If we had a curve showing the performance of normal children, of an average age of fourteen years, it would undoubtedly travel above these two curves, even in a process as simple as this of sorting forms. The older normal children would learn faster and would learn more than would the younger normal children, or the feeble-minded of their own age.

One further experiment in the learning of the feeble-minded as compared with normals of the same
mental age has been carried out. In order to measure the amount of material learned in a year by feeble-minded children, as compared with normal children of the same mental age, Dr. Murdoch studied a number of inmates at the Pennsylvania School for the Feeble-Minded, whose mental ages had been ascertained. First the ability of these children was determined by educational measurement, in reading, spelling, arithmetic, handwriting, composition, drawing, and language. Exactly one year later they were
remeasured in the same abilities. Since it is known how much average children of each school grade improve in these abilities in a year, and since it is known what the average age in each grade is, comparison between the feeble-minded and the normal on the basis of mental age seems permissible.

The outcome of the investigation was that of children starting the year's work with the same mental age, the normal learn much more within the allotted period than do the feeble-minded. From this result the investigator drew the conclusion that the feeble-minded learn much less than do normal children of equal mental age, in those school subjects which she studied; and that Woodrow's results, showing equality of improvement in sorting forms, was not substantiated for the presumably more complex abilities, — reading, spelling, arithmetic, handwriting, composition, drawing, and language.

Analysis will soon show us, however, that there is no discrepancy between the results of the two experiments. The fact simply is that in the case of a learning process, which extends over a period as long as a year, the children do not remain of equal mental age. If we start a year's task with a group of feeble-minded, who are nine years old mentally, and a group of normal children who are nine years old, at the end of the year the feeble-minded will still be approximately nine years old mentally, whereas the normal children will have reached the mental age of ten years.
This is true because the normal children are growing mentally at the average rate, while the feeble-minded are not. In the lapse of thirteen days the two groups do not have time to draw apart appreciably in growth. Hence in the first experiment, that of Dr. Woodrow, we really have a comparison of groups of equal mental age throughout. In three hundred and sixty-five days, however, the two groups draw very definitely apart. Hence in Dr. Murdoch's experiment we soon cease to have groups of equal mental age for comparison. The superior records of the normal children are due, most probably, to growth, and not to superior ability to practice at the mental age specified. The results of these two studies are thus in no way contradictory. On the contrary, they supplement each other.

*Transfer of Training in Normal and Feeble-Minded Children.* It is a fundamental principle of educational psychology that by practicing for a period of time in the performance of a given task, an individual will be aided in the performance of other tasks, which have elements in common with it. This principle is usually called the principle of transfer of training. Now it might be that normal and feeble-minded children of equal mental age show the same improvement in an activity practiced, but unequal transfer of that learning to related activities.

That there is no spread of improvement in the case of the feeble-minded has been affirmed. As in the
case of the question of improvement in a task specifically practiced, this statement has rested on common observations, comparing the feeble-minded with normal persons of equal chronological age. Many anecdotes are current in illustration of this point. For instance, an imbecile by prolonged practice under instruction learned to make beds very well, working by herself. After a time it was desired to expedite the bed-making, and another girl was assigned to work with the first, in the performance of her task, the plan being to have them work simultaneously on a bed. It was then found that the imbecile who had learned to make the beds by herself had to be re-taught to make beds with a helper. As soon as the situation became different in certain elements, what she had learned ceased to function.

Another illustration may be cited in the case of three imbecile men who were asked to scrub a large floor. Each man had learned to scrub a floor by himself, bringing the water and soap, scouring the boards, rinsing off the soap, and wiping up as he went. Each of them began in this manner on a section of the floor. The psychologist of the institution decided to introduce coöperation as an experiment. She showed how one of them could bring the water, another could scour, and the third could wipe up the suds after him. This innovation resulted in much confusion. As compared with what would have been the case with normal men of their chronological age,
there appeared to be no transfer of training in the one activity to the other so closely like it. But it is necessary to remember in all these instances that the mental ages of these imbeciles ranged between three and five years. The transfer of skill may well have been fully as great in their case as it would have been with normal children of three to five years.

In order to throw light upon this question in the learning of the feeble-minded, Dr. Woodrow experimented further with his groups of children. At the end of the thirteen days of practice in sorting geometrical forms, all the children were again tested for sorting sticks and pegs, for cancelling forms and letters. It is not necessary to rehearse the procedure in full detail here. It is sufficient to say that all the requirements of scientific method were fulfilled in the experiment (including "control groups" of both normal and feeble-minded children, who took the end tests in each instance, but who did not practice sorting forms during the thirteen intervening days). The result showed that no difference in amount of transference of improvement could be demonstrated, between the normal and the feeble-minded of equal mental age.

The Importance of Mental Age in Learning. It is obvious that none of these facts of educational psychology, so illuminating to the teacher of defectives, could have been discovered before means had been devised for determining mental age. Mental age,
not chronological age, is the basis of the learning curve. Ability to profit by instruction depends not

\[ \text{Actual Age} = 16 \text{ yrs. 6 mos.} \]
\[ \text{Mental Age} = 10 \text{ yrs. 0 mos.} \]

\[ \text{Actual Age} = 10 \text{ yrs. 8 mos.} \]
\[ \text{Mental Age} = 10 \text{ yrs. 1 mo.} \]

\[ \text{Actual Age} = 14 \text{ yrs. 7 mos.} \]
\[ \text{Mental Age} = 7 \text{ yrs. 10 mos.} \]

\[ \text{Actual Age} = 7 \text{ yrs. 3 mos.} \]
\[ \text{Mental Age} = 7 \text{ yrs. 2 mos.} \]

\[ \text{Actual Age} = 5 \text{ yrs. 4 mos.} \]
\[ \text{Mental Age} = 6 \text{ yrs. 4 mos.} \]

\[ \text{Actual Age} = 2 \text{ yrs. 8 mos.} \]
\[ \text{Mental Age} = 6 \text{ yrs. 1 mo.} \]

\[ \text{Actual Age} = 4 \text{ yrs. 6 mos.} \]
\[ \text{Mental Age} = 4 \text{ yrs. 6 mos.} \]

\[ \text{Actual Age} = 4 \text{ yrs. 7 mos.} \]
\[ \text{Mental Age} = 4 \text{ yrs. 4 mos.} \]

Fig. 16.—Writing of feeble-minded individuals, as compared with that of normal children of equal mental age; illustrating the importance of mental age in achievement.

on how long the individual has been in existence, but on the complexity and sensitivity of his nervous system. This complexity and sensitivity is repre-
sented by the concept of *mental age*, which shows the stage of intellectual growth attained.

**Fig. 17.** — Drawings of a house, comparing a feeble-minded adult with a normal child of equal mental age; illustrating the importance of *mental age* in achievement.

In children the nervous system becomes sensitive to a greater number of situations, as it grows from year to year. This is true of *all* children, but the
rate of growth and the ultimate limits of growth vary greatly from individual to individual. The kind and number of habits an individual can form at any given time are conditioned by the stage of mental growth

Fig. 18. — Drawings of a man, comparing a feeble-minded adult with a normal child of equal mental age; illustrating the importance of mental age in achievement.

which he has then reached. Thus one of the first questions which a teacher needs to have answered about the child placed under her care is this: What is his mental age?

It is for the psychology of the immediate future
to discover much more than is now known about the kinds of habits which are learnable at various mental levels. As far as the standard school curriculum is concerned this has been worked out by the rough method of trial and error, so that on the whole there is given in each school grade that which can be grasped and learned by children of the age which is average for that grade. For tasks not included in the conventional school curriculum, we are almost altogether without this information. At what mental age is it possible to form adequately the habits of a chauffeur? of a gardener? of a cook? of a paper-box maker? of a chemist? In answer to these questions we have only preliminary data collected from the mental tests in the army, and a few preliminary studies of ungraded class children whose industrial careers have been followed after they left school.

*Mental Age Is Not the Sole Condition of Learning,* though it is the single most important condition. We have already seen that children of the same mental age vary somewhat in their ability to perform given tasks. The human mind is far too complex to be completely inventoried by a single figure representing the general level of intelligence. We find cases of very marked special ability or disability in the feeble-minded, just as we find them in children of every other quality of general intelligence. This has already been fully discussed in a previous chapter. Moreover, differences in temperament, interest,
and control, which are not intellectual traits, are found among persons of equal mental age, and they too exert an influence on learning, by determining *attitude*. Sensory defects and physical defects sometimes play a part, also, in producing differences in improvement among those of the same degree of general intellectual capacity.

*Summary of the Psychology of Learning in the Case of Subnormal Children.* We may summarize our present knowledge of the learning process in the feeble-minded thus: (1) The feeble-minded cannot learn as well as the normal of equal chronological age. They cannot learn simple tasks at the same rate, and they cannot learn the more difficult tasks at all. (2) The feeble-minded learn at the same rate, and in the same way, as normal children of equal mental age, in tasks in which both have been experimentally tested.¹ (3) There is no necessary relation between ability to learn specific tasks appropriate to a given mental age, and ability to grow from one mental age to another. (4) No difference in amount of transference of training from practice in one task to the performance of other tasks having common elements, has been demonstrated to exist between

¹I am informed by Dr. S. S. Colvin that the unpublished data from his experiments on the learning of the feeble-minded as compared with normal children of equal mental age, show that the former learned as much as did the latter, in the tasks which were set; but that the learning curves of the feeble-minded were decidedly more irregular in outline than were those of the normal children.
the feeble-minded and normal children of equal mental age. The spread of improvement is apparently the same for both.

*Implications for Education.* The teacher who has thoroughly mastered the results of these studies will be in position to understand many of the most essential principles underlying the educational treatment of subnormal children. In the first place it is apparent that no intelligent plan for the instruction of a child can be instituted until his mental level is known. Under ideal conditions this will be determined by the school psychologist, whose work it is to make mental examinations and determine traits and aptitudes. At present only a few state departments of education are equipped to furnish the services of well trained psychologists. In the larger cities such services are rapidly becoming available, particularly where special classes have been organized.

In the second place, the child will generally be capable of performing school work which can be mastered by average children of his mental level. If his mental age is eight years, he will be able to learn subject matter becoming to ordinary eight-year-olds. Eight-year-olds are normally in the second or third grade (according to community).

However, where special classes have been organized it is usual to prescribe a special curriculum for the subnormal children, since their ultimate achievement
will be very limited at best. It is a waste of time and effort to teach deficient children the subject matter which underlies the understanding of fractions, or of syntax, when it is known that no matter how long they may live they will never attain a mental level which is capable of learning fractions and syntax. From these practical economic and social considerations a modified curriculum has been worked out, and will continue to be worked out as our knowledge of applied psychology increases. The content and organization of this curriculum cannot, however, be determined by psychology, but by educational aims and educational methods, emanating from current social philosophy.

REFERENCES


CHAPTER XV

SPECIAL CLASSES AND SPECIAL SCHOOLS

*Why Have Special Classes Been Established?* Before the enactment of compulsory education laws, those children who did not "fit" into the system suitable for the majority failed to attend school, or were excluded by act of the school itself. Subnormal children have always existed, doubtless in about the same proportion as they now exist, but the school did not become acutely aware of them until the law decreed that every child must receive an education, "if physically and mentally able to attend school." The state then hired truant officers to bring in those who of their own volition failed to attend, and the school was prohibited from "expelling" children. Thus the subnormal child and the school were forced into a reluctant mutual recognition of each other.

The recognition on the part of the school was reluctant because "an education" meant that which constituted the curriculum for the great average, and "education" in this sense these "misfits" were unable to assimilate. The teachers in the elementary school labored long and diligently with them, not recognizing the true source of difficulty. It reflects
unfavorably upon a teacher's ability when many of her pupils are unpromotable. Thus the problem of instructing and disciplining these children has been a great drain upon the time and energies of teachers, who were conscientious in the belief that all are created equal, and that all can learn equally if a sufficient effort is made. Nor is it correct to speak of this situation in the past tense, for it still exists in the majority of our public schools to-day. The cities are taking the lead, but towns, villages, and rural districts have, in most cases, still to face the problem in the light of scientific fact.

The same increasing interest in public education which led to the enactment of compulsory school laws, also led to the professional training of teachers. In the professional training of teachers psychology is of fundamental importance, and one of the chief interests of educational psychology for the past twenty years has been the study of individual differences. Gradually those facts which we have summarized in the first chapter of this book were recognized by progressive educators. It was learned that children differ by original nature over a very wide range of ability; that what constitutes education for one, may not constitute education for another; that the schools must offer a widely differentiated curriculum if compulsory education is to succeed. Thus special classes began to appear here and there over the country, as part of the school system.
These have been established not only for the children who are subnormal in general intelligence, but for children who for various reasons do not fit into the regular classes. In 1915 the city of Cleveland had special classes, separately conducted, for truants, for the deaf, for the blind, for the epileptic, for the crippled, for the tubercular, for the foreign born and recently immigrated, for the dull and backward (not so low in the scale as the feeble-minded), and for the mentally defective. In addition to these various kinds of special classes, provision is being made here and there for the very superior children, who can easily cover two or three years' work while the average child is covering one year's work.

The History of Special Classes for the Subnormal in the United States. As long ago as 1872 Dr. William T. Harris, then United States Commissioner of Education, called attention to what he designated the "pedagogical misfits" in St. Louis, but the educational world was not roused to any effective interest in the matter at that time. The idea of the actual establishment of special classes for deficient children in the public schools seems to have been first introduced publicly to American teachers as a professional group by August Schenck, of Detroit, in 1878, in an address before the American Teachers' Association. Acting on the suggestions there made, Dr. Andrew Rickoff, Superintendent of Schools for the city of Cleveland, established two special classes in Cleve-
land, limiting them to children who presented disciplinary problems. The second special class was established in Chicago, in 1892. This has since been expanded into the Department of Child Study and of Special Classes, for which Chicago has long been noted.

New York established its first special class in 1895, under the direction of Miss Elizabeth Farrell. Under Miss Farrell's direction, this work has grown until now there are over two hundred and fifty special classes for subnormal children in New York City. From 1895 up to the present time the movement for special classes has grown apace, so that in 1911, according to the Bulletin of the United States Bureau of Education, a total of ninety-nine cities had public classes for mentally defective pupils, and two hundred and twenty had classes for what was called "mentally backward" children. Since 1911 this number has greatly increased.

The first city to plan for a complete organization of these classes directly under the school administration was Providence, Rhode Island, which had six classes for truants and disciplinary cases, and a separate class for backward children, by 1896. Springfield, Massachusetts, followed with special classes in 1898, and Boston in 1899.

At the present time school reports show that certain states are very far ahead of others in provision for subnormal children. California, Illinois, New
Jersey, Wisconsin, Ohio, New York, Minnesota, Iowa, Missouri, and Massachusetts are among the leaders.

Organization of Special Classes. In cities where the school population is sufficient to call for the establishment of several classes for the subnormal, it is usual to consider them as a department, and to place this department under a supervisor, especially trained to administer it. The curriculum is planned by the supervisor, in consultation with the teachers, and others who may be concerned. The work is thus coördinated under a responsible head. Examples of this organization are seen in New York, St. Louis, Duluth, Richmond, and in many other large cities.

For rural districts and small towns the state may provide the administration of special classes, in cooperation with the local authorities. For example, the State of New York provides a supervisor of special classes in the state department of education, in accordance with a law passed in 1918. The first report of the state supervisor of special classes in Wisconsin has recently been issued. Michigan has conducted a mental survey during the months just passed, with the object of ascertaining what provisions are needed, and Virginia is engaged in a similar enterprise.

Special Schools. Usually the special class occupies a room in the building where the regular classes are held, but in certain communities the special classes of a large section are all placed in a building
by themselves, which is then called a special school. This plan has the advantage of rendering possible the more exact grading of the children by mental age. On the other hand, it has the disadvantage of bringing the children a greater distance from home than does the special class which is maintained in the regular school building. Each plan, in fact, has its advantages, and hence its staunch advocates.

In this connection it should be noted that the state institutions for the feeble-minded are now called schools, where laws pertaining to their maintenance have recently been re-formulated. Formerly, when intellectual subnormality was considered a mental disease, the institutions for the feeble-minded were called asylums, and were maintained as custodial institutions, on a medical basis. With the passing of this concept of intellectual subnormality, and with the recognition of the fact that children sent to these institutions are continuous in ability and kind with children in general, the word "asylum" is disappearing, and the institutions are being placed on an educational basis, under the designation school. These then become special schools, belonging under the supervision of the state department of education. Of course in these institutions there will always be a number of cases where mental development cannot rise above the level of infancy, and these will need nurses rather than teachers, as infants do. The majority of inmates are improvable by education, just
as other children are, though in lesser degree. Of these state schools the most widely known are the Training School for the Feeble-minded at Waverly, Massachusetts; the Training School for the Feeble-minded and Epileptic, at Faribault, Minnesota; the Whittier State School, at Whittier, California; and the Sonoma State Home at Eldridge, California. The Training School for the Feeble-minded at Vineland, New Jersey, which is perhaps better known here and abroad than any other special school of its kind in this country, is not strictly a state institution, being supported to a great extent privately. All these schools have become famous through their educational system, and through the research which they have carried on in the psychology and treatment of the mentally defective.

State institutions for the feeble-minded began to be established in the United States about the middle of the nineteenth century. The first institution of the kind in the United States was built at Syracuse, New York, in 1854. It is interesting to note that it was built as a school, and has always been maintained as a school. At the present time there are only a few states which are without provision for the feeble-minded.

Training of Teachers for Special Classes. In order to render efficient service in special classes, a teacher must have a firm grasp on the psychological and social problems presented by her pupils. This
means special training, beyond that which is prescribed for teachers generally, though this special training need not be elaborate or greatly prolonged. Within the past ten years departments of psychology and education, in universities and normal schools, have organized courses for teachers of special classes. Training is given in industrial arts, methods of teaching, hygiene, correction of speech, the psychology of subnormal children, corrective gymnastics, and sociology. The demand for teachers who have had the prescribed preparation for teaching in special classes far exceeds the supply at present.

An increasing number of teachers in the regular grades of the elementary school elect these courses, as they realize that they themselves have to deal with the subnormal children in communities where no special classes have been organized. To teachers of the regular grades it is especially interesting to know how the feeble-minded are distributed through the school, where no attempts at segregation have been made.

*Distribution of Subnormal Children in the Grades.* Idiots seldom enter the public schools, so that teachers do not have to deal with such children very frequently, unless their work is in a special school, such as those maintained by the states. If an idiot enters public school at all, it is only for a short time in kindergarten or first grade. Idiots are institutional cases, and are nearly always recognized as such by
parents, and by administrative authorities in the school. Defectives of IQ lower than 30 seldom appear at school. Defectives between 50 and 70 IQ are those who attend the public school, as distinguished from the state institution. In addition the public school has, of course, all the degrees of sub-normality which range from 70 IQ, up to normal, but which are not technically rated as "defective." Our question is, what is the distribution of the technically defective in the grades of the public school?

Investigation has shown that there are mentally defective children in all grades of the elementary school, but that the number found above the sixth grade is very small. High-grade defectives may occasionally reach the seventh or eighth grade in communities where there is a rule requiring that no child shall repeat a grade more than once. Under such a rule, promotion becomes automatic, and presence in a given grade loses much of the significance it should have in relation to mental capacity. Very little study has been made of the intelligence of high school pupils, but the indication is that adolescents with an IQ as low as 70 practically never enter public high school. It cannot be said that adolescents as low in the scale as 70 IQ absolutely never enter high school, for an instance is known to the present writer where a girl of intelligence nearly as low as this actually did enter a public high school, and was retained there for several weeks. However, the
high school teacher has little concern with the technically defective, though the subnormal who lie between 80 and 90 IQ very often complicate high school problems.

It is true, then, that the teachers of kindergarten, first grade, second grade, third grade, fourth grade, fifth grade, and sixth grade will have charge of the mentally defective, in school systems which make no provision for special classes. Teachers of kindergarten and first grade commonly have to deal with all defective children in the community, who are above the status of idiocy. A typical example of this was seen in a Nebraska town of about four thousand inhabitants. The teacher of the first grade had two rows of pupils far beyond first-grade age, sitting in the first-grade room. The true nature of the difficulties experienced with these children was not well understood. The complaint was that they had not yet been able to learn to read or write a single word, and since they could not proceed to the next grade until these arts had been mastered to some extent, they were "kept back." Some of them had spent three or four years in this room, taking the time of the teacher from the other pupils, and disturbing the discipline of the class, held there to tasks which were irrelevant to their needs.

Teachers of second grade also have to deal with nearly all of the defective children of a community, for they seldom pass beyond the compulsory school
age without visiting the second grade. Scarcely ever would a child be kept for eight or ten years in the first grade. He would be promoted at least once, if for no weightier reason than that a change might be thought to be beneficial.

Teachers of third and fourth grade have at any given time more defectives than any others, because there is a strong tendency for those of the status of moron to collect there. It is necessary to bear in mind the fact that as the degree of defect becomes milder, the numbers become greater. There are many more morons than imbeciles, and the former practically always reach the third or fourth grade before they pass the compulsory school age, even in schools where promotion is not regulated by artificial rules. They are able to perform the work of the third or fourth grade by the time they are fifteen or sixteen years old, because their mental level is then eight or nine years, and thus they really "reach" these grades.

In school systems where the rule is that a pupil may repeat a grade only once, the defective reaches the fifth or sixth grade, before the compulsory school age is passed. In many states the limit of compulsory attendance is sixteen years, for all who have not by that age passed successfully beyond the sixth grade. Under such circumstances, where no provision has been made for the scientific selection of the deficient, the defective child enters
school at about the age of six years. If he repeats every grade once on his scholastic journey, he reaches the third grade and remains in it during the years ten to twelve, he is in the fourth grade during the years twelve to fourteen, and is in the fifth grade from fourteen to sixteen. Thereafter he is above the age of compulsory attendance, and drops out of school. This is the typical career of many a feeble-minded boy and girl, who have dragged on through the elementary grades in this fashion, a burden to their teachers, to the administrative officers, and to themselves, never being recognized for what they really are. At the end of such a course, time, money, and effort have all been spent, and the boy or girl has learned almost nothing that is useful to one of such limited capacity. A feeble-minded boy after spending several months in a grade beyond his mental age was asked to tell what he had learned during the term. All he could say was that, "An interrogative sentence begins with a capital letter." Asked to illustrate by giving an interrogative sentence, he was unable to respond. He had no conception of what he was talking about. The work of the year had been a meaningless verbal jumble to him, in no sense training him, or preparing him for social participation. The state, having the intention of training him, had in reality forcibly deprived him of an education, by compelling him to attend on the work of the regular grades.
The Relation between the Special Classes and the Psychological Clinic. The first step in the proper training of the subnormal is *identification*. When special classes were first started, there was no technique for the scientific identification of the intellectually subnormal. Children were entered in the special classes largely on the basis of general conduct. In this way children of all degrees of intelligence were collected, in a heterogeneous group, with nothing in common except unsatisfactory conduct, or backwardness in school work. Educators were not slow to see that the success of the special class is directly dependent upon the accurate identification of the pupils who really belong in it. As psychologists developed a scientific technique for identifying the subnormal, educators called them into service, and the psychological clinic developed, as we have already seen in a previous chapter. The chief function of the psychological clinic is *identification*; the diagnosis of conduct. It therefore bears an essential relation to the special class. In follow-up work the clinic is also an important agency, as it keeps the records pertaining to each child, and can keep and furnish subsequent history.

Follow-up Work. It is not infrequently supposed by those who have made no systematic study of the subject, that the school will permanently solve the whole problem of mental deficiency, by administering training suited to the mental level of each child.
The training plays, however, only a part (though a large part), in the solution of the problem. No training can ever provide intelligence, the ability to meet new situations adequately, to make adaptations in emergencies, to perceive the remote consequences of present acts. Thus the defective if left to his own supervision is much more likely than is the average person to fall into trouble, to "lose his job," and to become dependent in spite of the specific skills which he has acquired by training.

In order to reduce these dangers to a minimum some system of follow-up work is necessary. Just what this system shall be is a question at present much discussed by social workers, educators, and citizens interested in the welfare of the state. We need especially to know the subsequent histories of the graduates of special classes. We need to know what their success is, socially and industrially. A few preliminary studies have been published by inspectors of ungraded classes, and the indication is that the graduates of special classes are able to maintain themselves industrially to a surprising degree. The findings are somewhat complicated, to be sure, by the fact that labor has been very scarce during the years of the war, and wages have been high. Whether the subnormal will make as good a showing in more normal times remains to be seen.

As a final word, let it be said that the school alone cannot solve the problem of mental deficiency. All
the agencies and agents of social welfare must enlist in an intelligent cooperation, to the end that the subnormal may find social adjustment and cease to be a menace and a burden to the state, and to themselves.

REFERENCES


