The Uses of Intelligence Tests
Lewis M. Terman (1916)

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Intelligence tests of retarded school children

Numerous studies of the age-grade progress of school children have afforded convincing evidence of the magnitude and seriousness of the retardation problem. Statistics collected in hundreds of cities in the United States show that between a third and a half of the school children fail to progress through the grades at the expected rate; that from 10 to 15 per cent are retarded two years or more; and that from 5 to 8 per cent are retarded at least three years. More than 10 per cent of the $400,000,000 annually expended in the United States for school instruction is devoted to re-teaching children what they have already been taught but have failed to learn.

The first efforts at reform which resulted from these findings were based on the supposition that the evils which had been discovered could be remedied by the individualizing of instruction, by improved methods of promotion, by increased attention to children's health, and by other reforms in school administration. Although reforms along these lines have been productive of much good, they have nevertheless been in a measure disappointing. The trouble was, they were too often based upon the assumption that under the right conditions all children would be equally, or almost equally, capable of making satisfactory school progress. Psychological studies of school children by means of standardized intelligence tests have shown that this supposition is not in accord with the facts. It has been found that children do not fall into two well-defined groups, the "feeble-minded" and the "normal." Instead, there are many grades of intelligence, ranging from idiocy on the one hand to genius on the other. Among those classed as normal, vast individual differences have been found to exist in original mental endowment, differences which affect profoundly the capacity to profit from school instruction.

We are beginning to realize that the school must take into account, more seriously than it has yet done, the existence and significance of these differences in endowment. Instead of wasting energy in the vain attempt to hold mentally slow and defective children up to a level of progress which is normal to the average child, it will be wiser to take account of the inequalities of children in original endowment and to differentiate the course of study in such a way that each child will be allowed to progress at the rate which is normal to him, whether that rate be rapid or slow.

While we cannot hold all children to the same standard of school progress, we can at least prevent the kind of retardation which involves failure and the repetition of a school grade. It is well enough recognized that children do not enter with very much zest upon school work in which they have once failed. Failure crushes self-confidence and destroys the spirit of work. It is a sad fact that a large proportion of children in the schools are acquiring the habit of failure. The remedy, of course, is to measure out the work for each child in proportion to his mental ability.

Before an engineer constructs a railroad bridge or trestle, he studies the materials to be used, and learns by means of tests exactly the amount of strain per unit of size his materials

will be able to withstand. He does not work empirically, and count upon patching up the mistakes which may later appear under the stress of actual use. The educational engineer should emulate this example. Tests and forethought must take the place of failure and patchwork. Our efforts have been too long directed by "trial and error." It is time to leave off guessing and to acquire a scientific knowledge of the material with which we have to deal. When instruction must be repeated, it means that the school, as well as the pupil, has failed.

Every child who fails in his school work or is in danger of failing should be given a mental examination. The examination takes less than one hour, and the result will contribute more to a real understanding of the case than anything else that could be done. It is necessary to determine whether a given child is unsuccessful in school because of poor native ability, or because of poor instruction, lack of interest, or some other removable cause.

It is not sufficient to establish any number of special classes, if they are to be made the dumping-ground for all kinds of troublesome cases -- the feeble-minded, the physically defective, the merely backward, the truants, the incorrigibles, etc. Without scientific diagnosis and classification of these children the educational work of the special class must blunder along in the dark. In such diagnosis and classification our main reliance must always be in mental tests, properly used and properly interpreted.

Intelligence tests of the feeble-minded

Thus far intelligence tests have found their chief application in the identification and grading of the feeble-minded. Their value for this purpose is twofold. In the first place, it is necessary to ascertain the degree of defect before it is possible to decide intelligently upon either the content or the method of instruction suited to the training of the backward child. In the second place, intelligence tests are rapidly extending our conception of "feeble-mindedness" to include milder degrees of defect than have generally been associated with this term. The earlier methods of diagnosis caused a majority of the higher grade defectives to be overlooked. Previous to the development of psychological methods the low-grade moron was about as high a type of defective as most physicians or even psychologists were able to identify as feeble-minded.

Wherever intelligence tests have been made in any considerable number in the schools, they have shown that not far from 2 per cent of the children enrolled have a grade of intelligence which, however long they live, will never develop beyond the level which is normal to the average child of 11 or 12 years. The large majority of these belong to the moron grade; that is, their mental development will stop somewhere between the 7-year and 12-year level of intelligence, more often between 9 and 12.

The more we learn about such children, the clearer it becomes that they must be looked upon as real defectives. They may be able to drag along to the fourth, fifth, or sixth grades, but even by the age of 16 or 18 years they are never able to cope successfully with the more abstract and difficult parts of the common-school course of study. They may master a certain amount of rote learning, such as that involved in reading and in the manipulation of number combinations, but they cannot be taught to meet new conditions effectively or to think, reason, and judge as normal persons do.

It is safe to predict that in the near future intelligence tests will bring tens of thousands of these high-grade defectives under the surveillance and protection of society. This will ultimately result in curtailing the reproduction of feeble-mindedness and in the elimination of

an enormous amount of crime, pauperism, and industrial inefficiency. It is hardly necessary to emphasize that the high-grade cases, of the type now so frequently overlooked, are precisely the ones whose guardianship it is most important for the State to assume.

Intelligence tests of delinquents

One of the most important facts brought to light by the use of intelligence tests is the frequent association of delinquency and mental deficiency. Although it has long been recognized that the proportion of feeble-mindedness among offenders is rather large, the real amount has, until recently, been underestimated even by the most competent students of criminology.

The criminologists have been accustomed to give more attention to the physical than to the mental correlates of crime. Thus, Lombroso and his followers subjected thousands of criminals to observation and measurement with regard to such physical traits as size and shape of the skull, bilateral asymmetries, anomalies of the ear, eye, nose, palate, teeth, hands, fingers, hair, dermal sensitivity, etc. The search was for physical "stigmata" characteristic of the "criminal type."

Although such studies performed an important service in creating a scientific interest in criminology, the theories of Lombroso have been wholly discredited by the results of intelligence tests. Such tests have demonstrated, beyond any possibility of doubt, that the most important trait of at least 25 per cent of our criminals is mental weakness. The physical abnormalities which have been found so, common among prisoners are not the stigmata of criminality, but the physical accompaniments of feeble-mindedness. They have no diagnostic significance except in so far as they are indications of mental deficiency. Without exception, every study which has been made of the intelligence level of delinquents has furnished convincing testimony as to the close relation existing between mental weakness and moral abnormality. Some of these findings are as follows:--

Miss Renz tested 100 girls of the Ohio State Reformatory and reported 36 per cent as certainly feeble-minded. In every one of these cases the commitment papers had given the pronouncement "intellect sound."

Under the direction of Dr. Goddard the Binet tests were given to 100 juvenile court cases, chosen at random, in Newark, New Jersey. Nearly half were classified as feeble-minded. One boy 17 years old had 9-year intelligence; another of l5½ had 8-year intelligence.

Of 56 delinquent girls 14 to 20 years of age tested by Hill and Goddard, almost half belonged either to the 9- or the 10-year level of intelligence.

Dr. G. G. Fernald's tests of 100 prisoners at the Massachusetts State Reformatory showed that at least 95 per cent were feebleminded.

Of 1186 girls tested by Miss Dewson at the State Industrial School for Girls at Lancaster, Pennsylvania, 28 per cent were found to have subnormal intelligence.

Dr. Katherine Bement Davis's report on 1000 cases entered in the Bedford Home for Women, New York, stated that there was no doubt but that at least 157 were feeble-minded. Recently there has been established at this institution one of the most important research laboratories of the kind in the United States, with a trained psychologist, Dr. Mabel Feniald, in charge.

Of 564 prostitutes investigated by Dr. Anna Dwyer in connection with the Municipal Court of Chicago, only 3 per cent had gone beyond the fifth grade in school. Mental tests were not made, but from the data given it is reasonably certain that half or more were feeble-minded.

Tests, by Dr. George Ordahl and Dr. Louise Ellison Ordahl, of cases in the Geneva School for Girls, Geneva, Illinois, showed that, on a conservative basis of classification, at least 18 per cent were feeble-minded. At the Joliet Prison, Illinois, the same authors found 50 per cent of the female prisoners feeble-minded, and 26 per cent of the male prisoners. At the St. Charles School for Boys 26 per cent were feeble-minded.

Tests, by Dr. J. Harold Williams, of 150 delinquents in the Whittier State School for Boys, Whittier, California, gave 28 per cent feeble-minded and 25 per cent at or near the border-line. About 300 other juvenile delinquents tested by Mr. Williams gave approximately the same figures. As a result of these findings a research laboratory has been established at the Whittier School, with Dr. Williams in charge. In the girls' division of the Whittier School, Dr. Grace Fernald collected a large amount of psychological data on more than 100 delinquent girls. The findings of this investigation agree closely with those of Dr. Williams for the boys.

At the State Reformatory, Jeffersonville, Indiana, Dr. von Klein-Schmid, in an unusually thorough psychological study of 1000 young adult prisoners, finds the proportion of feeble-mindedness not far from 50 per cent.

But it is needless to multiply statistics. Those given are but samples. Tests are at present being made in most of the progressive prisons, reform schools, and juvenile courts throughout the country, and while there are minor discrepancies in regard to the actual percentage who are feebleminded, there is no investigator who denies the fearful role played by mental deficiency in the production of vice, crime, and delinquency.[1]

Heredity studies of "degenerate" families have confirmed, in a striking way, the testimony secured by intelligence tests. Among the best known of such families are the "Kallikaks," the "Jukes," the "Hill Folk," the Nams," the Zeros," and the "Ishmaelites."

The Kallikak family. Martin Kallikak was a youthful soldier in the Revolutionary War. At a tavern frequented by the militia he met a feeble-minded girl, by whom he became the father of a feeble-minded son. In 1912, there were 480 known direct descendants of this temporary union. It is known that 36 of these were illegitimates, that 33 were sexually immoral, that 24 were confirmed alcoholics, and that 8 kept houses of ill-fame. The explanation of so much immorality will be obvious when it is stated that of the 480 descendants, 143 were known to be feeble-minded, and that many of the others were of questionable mentality.

A few years after returning from the war this same Martin Kallikak married a respectable girl of good family. From this union 496 individuals have been traced in direct descent, and in this branch of the family there were no illegitimate children, no immoral women, and only one man who was sexually loose. There were no criminals, no keepers of houses of ill-fame, and only two confirmed alcoholics. Again the explanation is clear when it is stated that this branch of the family did not contain a single feeble-minded individual. It was made up of doctors, lawyers, judges, educators, traders, and landholders.[2]

The Hill Folk. The Hill Folk are a New England family of which 709 persons have been traced. Of the married women, 24 per cent had given birth to illegitimate offspring, and 10 per

cent were prostitutes. Criminal tendencies were clearly shown in 24 members of the family, while alcoholism was still more common. The proportion of feeble-minded was 48 per cent. It was estimated that the Hill Folk have in the last sixty years cost the State of Massachusetts, in charitable relief, care of feeble-minded, epileptic, and insane, conviction and punishment for crime, prostitution, pauperism, etc., at least $500,000. [3]

The Nam family and the Jukes give equally dark pictures as regards criminality, licentiousness, and alcoholism, and although feeble-mindedness was not as fully investigated in these families as in the Kallikaks and the Hill Folk, the evidence is strong that it was a leading trait. The 784 Nams who were traced included 187 alcoholics, 232 women and 199 men known to be licentious, and 40 who became prisoners. It is estimated that the Nams have already cost the State nearly $1,500,000. [4]

Of 540 Jukes, practically one fifth were born out of wedlock, 37 were known to be syphilitic, 53 had been in the poorhouse, 76 had been sentenced to prison, and of 229 women of marriageable age 128 were prostitutes. The economic damage inflicted upon the State of New York by the Jukes in seventy-five years was estimated at more than $1,300,000, to say nothing of diseases and other evil influences which they helped to spread.[5]

But why do the feeble-minded tend so strongly to become delinquent? The answer may be stated in simple terms. Morality depends upon two things: (a) the ability to foresee and to weigh the possible consequences for self and others of different kinds of behavior; and (b) upon the willingness and capacity to exercise self-restraint. That there are many intelligent criminals is due to the fact that (a) may exist without (b). On the other hand, (b) presupposes (a). In other words, not all criminals are feeble-minded, but all feeble-minded are at least potential criminals. That every feeble-minded woman is a potential prostitute would hardly be disputed by any one. Moral judgment, like business judgment, social judgment, or any other kind of higher thought process, is a function of intelligence. Morality cannot flower and fruit if intelligence remains infantile.

All of us in early childhood lacked moral responsibility. We were as rank egoists as any criminal. Respect for the feelings, the property rights, or any other kind of rights, of others had to be laboriously acquired under the whip of discipline. But by degrees we learned that only when instincts are curbed, and conduct is made to conform to principles established formally or accepted tacitly by our neighbors, does this become a livable world for any of us. Without the intelligence to generalize the particular, to foresee distant consequences of present acts, to weigh these foreseen consequences in the nice balance of imagination, morality cannot be learned. When the adult body, with its adult instincts, is coupled with the undeveloped intelligence and weak inhibitory powers of a 10-year-old child, the only possible outcome, except in those cases where constant guardianship is exercised by relatives or friends, is some form of delinquency.

Considering the tremendous cost of vice and crime, which in all probability amounts to not less than $500,000,000 per year in the United States alone, it is evident that psychological testing has found here one of its richest applications. Before offenders can be subjected to rational treatment a mental diagnosis is necessary, and while intelligence tests do not constitute a complete psychological diagnosis, they are, nevertheless, its most indispensable part.

Intelligence tests of superior children

The number of children with very superior ability is approximately as great as the number of feeble-minded. The future welfare of the country hinges, in no small degree, upon the right education of these superior children. Whether civilization moves on and up depends most on the advances made by creative thinkers and leaders in science, polities, art, morality, and religion. Moderate ability can follow, or imitate, but genius must show the way.

Through the leveling influences of the educational lockstep such children at present are often lost in the masses. It is a rare child who is able to break this lockstep by extra promotions. Taking the country over, the ratio of "accelerates" to "retardates" in the school is approximately 1 to 10. Through the handicapping influences of poverty, social neglect, physical defects, or educational maladjustments, many potential leaders in science, art, government, and industry are denied the opportunity of a normal development. The use we have made of exceptional ability one of the primitive methods of surface mining.

It is necessary to explore the nation's hidden resources of intelligence. The common saying that "genius will out" is one of those dangerous half-truths with which too many people rest content.

Psychological tests show that children of superior ability are very likely to be misunderstood in school. The writer has tested more than a hundred children who were as much above average intelligence as moron defectives are below. The large majority of these were found located below the school grade warranted by their intellectual level. One third had failed to reap any advantage whatever, in terms of promotion, from their very superior intelligence. Even genius languishes when kept over-long at tasks that are too easy.

Our data show that teachers sometimes fail entirely to recognize exceptional superiority in a pupil, and that the degree of such superiority is rarely estimated with anything like the accuracy which is possible to the psychologist after a one-hour examination. *B. F.,* for example, was a little over 7½ years old when tested. He was in the third grade, and was therefore thought by his teacher to be accelerated in school. This boy's intelligence, however, was found to be above the 12-year level. There is no doubt that his mental ability would have enabled him, with a few months of individual instruction, to carry fifth or even sixth-grade work as easily as third, and without injury to body or mind. Nevertheless, the teacher and both the parents of this child had found nothing remarkable about him. In reality he belongs to a grade of genius not found oftener than once in several thousand cases.

Another illustration is that of a boy of 10½ years who tested at the "average adult" level. He was doing superior work in the sixth grade, but according to the testimony of the teacher had "no unusual ability." It was ascertained from the parents that this boy, at an age when most children are reading fairy stories, had a passion for standard medical literature and textbooks in physical science. Yet, after more than a year of daily contact with this young genius (who is a relative of Meyerbeer, the composer), the teacher had discovered no symptoms of unusual ability.[6]

Teachers should be better trained in detecting the signs of superior ability. Every child who consistently gets high marks in his school work with apparent ease should be given a mental examination, and if his intelligence level warrants it he should either be given extra promotions, or placed in a special class for superior children where faster progress can be made. The latter is the better plan, because it obviates the necessity of skipping grades; it permits rapid but continuous progress.

The usual reluctance of teachers to give extra promotions probably rests upon three factors: (1) mere inertia; (2) a natural unwillingness to part with exceptionally satisfactory pupils; and (3) the traditional belief that precocious children should be held back for fear of dire physical or mental consequences.

In order to throw light on the question whether exceptionally bright children are specially likely to be one-sided, nervous, delicate, morally abnormal, socially unadaptable, or otherwise peculiar, the writer has secured rather extensive information regarding 31 children whose mental age was found by intelligence tests to be 25 per cent above the actual age. This degree of intelligence is possessed by about 2 children out of 100, and is nearly as far above average intelligence as high-grade feeble-mindedness is below. The supplementary information, which was furnished in most cases by the teachers, may be summarized as follows: --

1 Ability special or general. In the case of 20 out of 31 the ability is decidedly general, and with 2 it is mainly general. The talents of 5 are described as more or less special, but only in one case is it remarkably so. Doubtful 4.

2 Health. 15 are said to be perfectly healthy; 13 have one or more physical defects; 4 of the 13 are described as delicate; 4 have adenoids; 4 have eye-defects; 1 lisps; and 1 stutters. These figures are about the same as one finds in any group of ordinary children.

3 Studiousness. "Extremely studious," 15; "usually studious" or "fairly studious," 11; "not particularly studious," 5; "lazy," 0.

4 Moral traits. Favorable traits only, 19; one or more unfavorable traits, 8; no answer, 4. The eight with unfavorable moral traits are described as follows: 2 are "very self-willed"; 1 "needs close watching"; 1 is "cruel to animals"; 1 is "untruthful"; 1 is "unreliable"; 1 is "a bluffer"; 1 is "sexually abnormal," perverted," and "vicious." It will be noted that with the exception of the last child, the moral irregularities mentioned can hardly be regarded, from the psychological point of view, as essentially abnormal. It is perhaps a good rather than a bad sign for a child to be self-willed; most children "need close watching"; and a certain amount of untruthfulness in children is the rule and not the exception.

5 Social adaptability. Socially adaptable, 25; not adaptable, 2; doubtful, 4.

6 Attitude of other children. "Favorable," "friendly," "liked by everybody," "much admired," "popular," etc., 26; "not liked," 1; "inspires repugnance," 1; no answer, 1.

7 Is child a leader? "Yes," 14; "no," or "not particularly," 12; doubtful, 5.

8 Is play life normal? "Yes," 26; "no," 1; "hardly," 1; doubtful, 3.

9 1s child spoiled or vain? "No," 22; "yes," 5; "somewhat," 2; no answer, 2.

According to the above data, exceptionally intelligent children are fully as likely to be healthy as ordinary children; their ability is far more often general than special, they are studious above the average, really serious faults are not common among them, they are nearly always socially adaptable, are sought after as playmates and companions, their play life is usually normal, they are leaders far oftener than other children, and notwithstanding their many really superior qualities they are seldom vain or spoiled.

It would be greatly to the advantage of such children if their superior ability were more promptly and fully recognized, and if (under proper medical supervision, of course) they were promoted as rapidly as their mental development would warrant. Unless they are given the grade of work which calls forth their best efforts, they run the risk of falling into lifelong habits of submaximum efficiency. The danger in the case of such children is not over-pressure, but under-pressure.

Intelligence tests as a basis for grading

Not only in the case of retarded or exceptionally bright children, but with many others also, intelligence tests can aid in correctly placing the child in school.

The pupil who enters one school system from another is a case in point. Such a pupil nearly always suffers a loss of time. The indefensible custom is to grade the newcomer down a little, because, forsooth, the textbooks he has studied may have differed somewhat from those he is about to take up, or because the school system from which he comes may be looked upon as inferior. Teachers are too often suspicious of all other educational methods besides their own. The present treatment accorded such children, which so often does them injustice and injury, should be replaced by an intelligence test. The hour of time required for the test is a small matter in comparison with the loss of a school term by the pupils.

Indeed, it would be desirable to make all promotions on the basis chiefly of intellectual ability. Hitherto the school has had to rely on tests of information because reliable tests of intelligence have not until recently been available. As trained Binet examiners become more plentiful, the information standard will have to give way to the criterion which asks merely that the child shall be able to do the work of the next higher grade. The brief intelligence test is not only more enlightening than the examination; it is also more hygienic. The school examination is often for the child a source of worry and anxiety; the mental test is an interesting and pleasant experience.

Intelligence tests for vocational fitness

The time is probably not far distant when intelligence tests will become a recognized and widely used instrument for determining vocational fitness. Of course, it is not claimed that tests are available which will tell us unerringly exactly what one of a thousand or more occupations a given individual is best fitted to pursue. But when thousands of children who have been tested by the Binet scale have been followed out into the industrial world, and their success in various occupations noted, we shall know fairly definitely the vocational significance of any given degree of mental inferiority or superiority. Researches of this kind will ultimately determine the minimum "intelligence quotient" necessary for success in each leading occupation.

Industrial concerns doubtless suffer enormous losses from the employment of persons whose mental ability is not equal to the tasks they are expected to perform. The present methods of trying out new employees, transferring them to simpler and simpler jobs as their inefficiency becomes apparent, is wasteful and to a great extent unnecessary. A cheaper and more satisfactory method would be to employ a psychologist to examine applicants for positions and to weed out the unfit. Any business employing as many as five hundred or a thousand workers, as, for example, a large department store, could save in this way several times the salary of a well-trained psychologist.

That the industrially inefficient are often of subnormal intelligence has already been demonstrated in a number of psychological investigations. Of 150 "hoboes" tested under the direction of the writer by Mr. Knollin, at least 15 per cent belonged to the moron grade of mental deficiency, and almost as many more were border-line cases. To be sure, a large proportion were found perfectly normal, and a few even decidedly superior in mental ability, but the ratio of mental deficiency was ten or fifteen times as high as that holding for the general population. Several had as low as 9- or 10-year intelligence, and one had a mental level of 7 years. The industrial history of such subjects, as given by themselves, was always

about what the mental level would lead us to expect -- unskilled work, lack of interest in accomplishment, frequent discharge from jobs, discouragement, and finally the "road."

The above findings have been fully paralleled by Mr. Glenn Johnson and Professor Eleanor Rowland, of Reed College, who tested 108 unemployed charity cases in Portland, Oregon. Both of these investigators made use of the Stanford revision of the Binet scale, which is especially serviceable in distinguishing the upper-grade defectives from normals.

It hardly needs to be emphasized that when charity organizations help the feeble-minded to float along in the social and industrial world, and to produce and rear children after their kind, a doubtful service is rendered. A little psychological research would aid the united charities of any city to direct their expenditures into more profitable channels than would otherwise be possible.

Other uses of intelligence tests

Another important use of intelligence tests is in the study of the factors which influence mental development. It is desirable that we should be able to guard the child against influences which affect mental development unfavorably; but as long as these influences have not been sifted, weighed, and measured, we have nothing but conjecture on which to base our efforts in this direction.

When we search the literature of child hygiene for reliable evidence as to the injurious effects upon mental ability of malnutrition, decayed teeth, obstructed breathing, reduced sleep, bad ventilation, insufficient exercise, etc., we are met by endless assertion painfully unsupported by demonstrated fact. We have, indeed, very little exact knowledge regarding the mental effects of any of the factors just mentioned. When standardized mental tests have come into more general use, such influences will be easy to detect wherever they are really present.

Again, the most important question of heredity is that regarding the inheritance of intelligence; but this is a problem which cannot be attacked at all without some accurate means of identifying the thing which is the object of study. Without the use of scales for measuring intelligence we can give no better answer as to the essential difference between a genius and a fool than is to be found in legend and fiction.

Applying this to school children, it means that without such tests we cannot know to what extent a child's mental performances are determined by environment and to what extent by heredity. Is the place of the so-called lower classes in the social and industrial scale the result of their inferior native endowment, or is their apparent inferiority merely a result of their inferior home and school training? Is genius more common among children of the educated classes than among the children of the ignorant and poor?

Are the inferior races really inferior, or are they merely unfortunate in their lack of opportunity to learn?

Only intelligence tests can answer these questions and grade the raw material with which education works. Without them we can never distinguish the results of our educational efforts with a given child from the influence of the child's original endowment. Such tests would have told us, for example, whether the much-discussed "wonder children," such as the Sidis and Wiener boys and the Stoner girl, owe their precocious intellectual prowess to superior training (as their parents believe) or to superior native ability. The supposed effects upon

mental development of new methods of mind training, which are exploited so confidently from time to time (e.g., the Montessori method and the various systems of sensory and motor training for the feeble-minded), will have to be checked up by the same kind of scientific measurement.

In all these fields intelligence tests are certain to play an ever-increasing rôle. With the exception of moral character, there is nothing as significant for a child's future as his grade of intelligence. Even health itself is likely to have less influence in determining success in life. Although strength and swiftness have always had great survival value among the lower animals, these characteristics have long since lost their supremacy in man's struggle for existence. For us the rule of brawn has been broken, and intelligence has become the decisive factor in success. Schools, railroads, factories, and the largest commercial concerns may be successfully managed by persons who are physically weak or even sickly. One who has intelligence constantly measures opportunities against his own strength or weakness and adjusts himself to conditions by following those leads which promise most toward the realization of his individual possibilities.

All classes of intellects, the weakest as well as the strongest, will profit by the application of their talents to tasks which are consonant with their ability. When we have learned the lessons which intelligence tests have to teach, we shall no longer blame mentally defective workmen for their industrial inefficiency, punish weak-minded children because of their inability to learn, or imprison and hang mentally defective criminals because they lacked the intelligence to appreciate the ordinary codes of social conduct.

Footnotes

[1] See References at end of volume.
[2] H. H. Goddard: *The Kallikak Family.* (1914.) 141 pp.
[3] Danielson and Davenport: *The Hill Folk.* Eugenics Record Office, Memoir No. 1. 1912. 56 pp.
[4] Estabrook and Davenport: *The Nam Family*. Eugenics Record Office. Memoir No. 2. (1912). 85 pp.
[5] R. L. Dugdale: *The Jukes.* (Fourth edition, 1910.) 120 pp. G. P. Putuam's Sons.
[6] See p. 26 *ff.* for further illustrations of this kind.