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Editorials

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Editorials

PSYCHOLOGY OF THE EDUCATIONAL "STANDPATTER"

Some are educational "standpatters" because they have never done any thinking, others because they are held captive by the thinking they once did. We are here concerned only with the latter. Sometimes he is a scholar in academic lines but has reached his saturation point. The mind has crystallized prematurely. A negativistic attitude toward the new is one of the symptoms. Such an individual becomes hypercritical toward his contemporaries. He considers their work either as cheap and shoddy or else as nothing but an amplification of something from one of the favorite authors of his youth. The pose of disdainful superiority is cultivated. He cuts himself off from his fellow workers and develops the shut-in personality.

One wonders whether such persons, notwithstanding the scholarly attainments which they sometimes possess, have not after all a fundamental intellectual defect. Perhaps it is a lack of constructive imagination that robs them of open-mindedness. Their thinking seems to have no anticipatory reference. They are unable to see how things point. They can not see the new day that is dawning in education because their intellectual heads have been set on backwards.

What a relief to turn to the educational worker who instead of specializing on the destruction of the new, just because it is new, has a never failing sense for the importance of a novel contribution, even if it is imperfect or in part erroneous. Instead of wasting his energies in the attempt to overthrow a reading test or a handwriting scale or a scale for grading English compositions he tries to develop something better. While others are proclaiming that intelligence is too complex to be measured, he devises an instrument to measure it. While others are proving the impossibility of scientific vocational selection he devises and

standardizes a trade test that works. Another in the field of school administration surveys his own school and remodels his curriculum and methods in the light of the results, while neighboring superintendents and principals are inveighing against the pretensions of measurement enthusiasts.

This is not a plea in behalf of educational science. That is on its way and will not be turned back. It is rather a plea to the young men in education, whether in the academic or the practical field, to direct their talents along profitable lines. It would also point out the reflex effects upon the worker of the lend-a-hand attitude, as contrasted with the attitude of purely destructive criticism. The one attitude favors prolonged intellectual plasticity, the other brings premature hardening of the intellectual arteries. The one means professional growth, the other professional death, not less sure because it may be insidious and slow.

L. M. T.

THE VALUE OF STANDARDIZED SILENT READING TESTS

The average silent reading rate of eighth grade pupils is approximately 240 words per minute for continuous material. Scientific investigation is revealing that this rate may be greatly increased by the application of appropriate methods. On the basis of data already secured, it is conservative to say that this rate could be increased 25 percent. As a matter of fact, it is **even** conservative to say that it could be increased 50 percent.

Silent reading is used as a tool in practically all subjects studied in the high school or in college. The pupil who is equipped to read at the rate of 300 words per minute has a decided advantage over the pupil who is equipped to read only 240 words per minute. It means that the pupil who reads more slowly either must spend more hours upon his work or do less work.

Of two pupils who spend an equal number of hours upon their work in high school, the one who reads at the rate of 300 words per minute will accomplish one-fourth more than the pupil who reads at the rate of 240 words per minute. This will mean that in the course of four years this pupil will do 25 percent more work, which approximates the equivalent of an extra year of schooling.

The data which we have at hand not only shows that the rate may be increased, but also that the degree of comprehension can be materially increased, perhaps to an equal extent. Therefore, not only may pupils be trained to read more rapidly but at the same time they may be trained to read with increased understanding. Thus, the pupil who has been trained to read at the rate of 300 words per minute not only will gain an extra year's schooling during his high-school course, but if his training has been of the right sort, he will actually do a better quality of work.

It appears that the use of a standardized test for measuring the rate and comprehension of pupils is one method by which the rate of silent reading and the degree of comprehension may be materially increased. At least, where such tests have been used and the results properly interpreted, these dimensions of silent reading ability have been increased. Therefore, it is not idle to say that by using standardized silent reading tests systematically, it will be possible to increase the amount of education received by pupils completing the high school by 25 percent. In fact, as we have already suggested, such a prediction is conservative in view of the facts at hand.

The fundamental resources of a state are vested in the abilities of its citizens. To develop these abilities is to enrich society. The increased wealth which may accrue to the nation from the effective use of standardized tests of silent reading may be compared with the abundance that has already resulted from improved methods in science.

W. S. M.

RESEARCH AND THE PROBLEMS OF EDUCATIONAL READJUSTMENT

The decade preceding the World War was educationally notable for the advances it brought along material lines and the external aspects of school administration. Large sums were expended for school buildings, equipment, and playgrounds. New types of schools to meet new needs were created in large number. The profession of school administration was born and brought safely through the ills and dangers which always lie in wait for an infant profession.

But the war has done three things: (1) it has left the schools financially embarrassed and has checked, for the time being, material progress; (2) it has ruthlessly exposed our educational failures; (3) it has given us a host of new educational problems.

History shows that when poverty-stricken schools face insistent demands for higher efficiency the result is likely to be a development along the lines of inner organization, method and procedure. This occurred after the Civil War; it will occur again. A new educational era is upon us. Not for fifty years have the problems of education been as fluid as they are today. It is a time for conscious self-searching and for conscious decision as to the attitude one will take toward the new problems of educational readjustment.

The period following the Civil War marked a renaissance of interest in educational method based upon philosophy and speculative psychology. Waves of Hegelianism and Herbartianism swept over the country. Rousseau, Pestalozzi, and Froebel were studied and debated. In the period which has recently begun questions of educational procedure are again coming to the fore, but with the difference that we are now seeking our solutions by the methods of science rather than by an appeal to arm-chair psychology. Everywhere tradition is being challenged by experiment. No method or program is sacred enough to escape the inquisitive and ubiquitous pedagogical test or scale. By means of intelligence scales the material with which the school works is subjected to the same cold analysis as the products of farm, factory, or mine. Nothing is taken for granted; everything must be proved. The spirit of educational research rules the day.

That much of this scientific endeavor will be ill directed or misapplied, and that much which is well directed will prove abortive because of the complexities of the problems, goes without saying. We may find that the conclusions of science no more than the conclusions of the *a priori* theorist can safely be accepted with the eyes shut. There may even arise a new type of pedant who will be entirely unable to think educationally except in terms of zero points, frequency curves, probable errors and mean square deviations!

Nevertheless educational research has come to stay. The only escape from the errors of scientific method is by a more

careful and sagacious use of that same method. The best cure for the scientific pedant will be such a development of his methods as will show finally where the boundaries lie beyond which those methods are not for the present applicable. There is little danger that opponents of the scientific movement in education will be able seriously to retard its progress. There is every likelihood that such opponents of the inevitable will lose whatever opportunities they might have had to shape the course of modern educational currents.

L. M. T.

MENTAL AND PHYSICAL AGE IN RELATION TO SCHOOL ADMINISTRATION

Compulsory education laws are driving thousands of children to the schools who, under former conditions, would not have attended. The statutes make no distinctions except those based upon chronological age and "physical or mental disability." It is assumed that when a child is six years of age, he is ready to enter the first grade. Many children are ready before their sixth birthday, many others will not be ready until later, and still others will never be ready at all. If we are going to speak in terms of age, let us use the ages which really apply. When we say that a six-year-old child is ready for school, we at once get into difficulties because of the wide range of both the physical and mental abilities of such children. We need a finer adjustment than chronological age provides. Evidently then, for school use we must have a different conception of age. If six years is the standard for entrance, we must define it as six years *physically* and six years *mentally*. Thus we have the conception (1) of physical or anatomical age and (2) of mental age. Both of these have real application to the work of the school and to the competence of children to do the work.

We can measure physical age and mental age with surprising accuracy. It is gradually becoming incumbent upon the school to do this. An x-ray photograph of the wrist bones indicates clearly their degrees of ossification. A series of standard photographs each representing average development for a chronological age will permit the matching of each child's photograph against the series so that the skeletal development of a child may be

determined in terms of *years*. This skeletal development is a reliable index of physical maturity. Almost as good an index of physical maturity, however, may be obtained from an examination of a child's teeth. Since permanent teeth should normally appear in a fixed order and at relatively fixed chronological ages, the number and character of these teeth furnish a reasonably accurate measure of physical maturity. Anyone can apply this method, for the teeth are obviously either present or absent. All one needs in interpreting the results of the count is a table indicating the ages at which the teeth appear in the child whose anatomical or physical development is normal.

Evidence shows that anatomical age corresponds much more closely to mental age than does chronological age. But although anatomical age is a much safer criterion than chronological age as a basis of school procedure, it is insufficient. In all cases it must be supplemented by a knowledge of mental age. After all, a child's success in school depends primarily upon his intelligence. The means of measuring intelligence are multiplying. The most brilliant constructive achievement of psychology and the most useful of its many gifts to education has been the Binet-Simon Intelligence Scale. This scale reveals in terms of age the mentality of children. It is a "wonderful instrument" although critics are agreed that its usefulness in measuring intelligence beyond that of the normal child of thirteen or fourteen is relatively less than it is for lower degrees of intelligence.

We are now, however, on the eve of another important application of psychology to education. The Binet-Simon Scale showed the possibilities of mental measurement in the schools. It remained, however, for the psychologists to devise a means of mental measurement which could be applied quickly, cheaply, and without the services of a specially trained examiner. Such means of measurement are now available. Some of them are being commercially distributed. The validity of these "group tests"—the extent to which they really measure intelligence—and their reliability must be more fully established. But their usefulness is now beyond question. They are not substitutes for individual tests. They give a reasonably accurate general impression. Pupils showing extreme scores should be given the Binet test.

With knowledge of the mental ages of children supplemented by knowledge of their anatomical or physical ages, we shall be better able to adjust the work of the school to that wide-ranging human variability which is everywhere present and which we cover with the term "individual differences."

We are confronted with the necessity for training large masses of pupils. Perforce we must organize them into classes. The real task of the modern school, therefore, is to reach the individual through the group. This can only be done on the basis of a grouping according to the things which really determine success in school work.

Boards of education should provide for a survey of at least the mental levels of all the children in the schools which they control. About twenty percent of the children should receive special education of some kind. The intelligence of about ten percent is so far below normal that their training must consist of activities which call for relatively little mental ability. Reading, writing, spelling, and arithmetic, although they are subjects ignorance of which is a misfortune, are also subjects which children of certain intellectual levels can never learn. If a child's mental age is only half of his chronological age, he has an intelligence quotient of 50. This will remain relatively fixed. Such a child will never become much more than eight years old mentally. He cannot learn arithmetic or even enough reading and writing to do him any good. If his intelligence quotient is 70, we may teach him some reading and writing, but it will be useless to try to teach him more in arithmetic than the fundamental operations and very simple notions of fractions. Children of intelligence quotients of 70 or 80 sometimes reach the high school. They take up Latin and algebra although they never succeed in these subjects. Indeed, we know that the high school as it is at present organized affords no place for children of such a degree of mentality.

There are, however, a vast number of children whose intelligence is below normal but not very seriously so. While these children can profit by the teaching of the common branches in their more elementary form, they should be given considerable industrial training for they will recruit the ranks of unskilled and semi-skilled labor. We need not suppose that they will be either

economically incompetent or unhappy. An increasing amount of the work of the world is being done by them; and their rewards—at least in wages—are already large, and they are increasing.

Accordingly, the task of the school is, first, to identify those whose lot it will be to serve in these capacities and, second, to give them such intellectual training as they can use and such vocational training as will fit them to perform competently the sort of work they will be called upon to do. The kinds of manual work best suited to each mental age has now been worked out in considerable detail. A woman of the mental age of seven may be taught to do well certain forms of housework, plain sewing, rug weaving, lace making, and a number of other occupations. A man of the same age may do good housework or laundry work, may do “outside work” or teaming, brush making, and bench work. In fact, the number of possible occupations for such men is rather large. Semi-skilled labor such as some employees in stores, policemen, firemen, car men, and some of the lower forms of clerical work may be and indeed should be done by persons possessing an intelligence inferior to normal, or at least not higher than normal.

At the other end of the scale of intelligence there are some eight or ten percent of the children whose gifts are so superior that they should not be subjected to the school training which is now supposed to be adjusted to the abilities of the normal child. Since, in the case of the superior child intellectual ability is predominant, he can negotiate the regular course of study in less time than can the normal child; for the regular course of study is essentially intellectual in its appeal. Many children, capable of completing the elementary school in from four to six years, are being unfairly treated and permitted to fall into loose habits of study by being required to spend eight years in the elementary school.

Not only should the gifted child progress more rapidly than the normal child, but his work should differ also in quality and method. Additional problems, more significant relationships, supplementary assignments, collateral readings—all the types of activities which we would like to carry on in the schools but for which the “minimum essentials” permit so little time—these should be prominent in the training of gifted children.

Yet special provision for gifted children is almost non-existent. Without the aid of intelligence tests the gifted child is much less frequently identified than the dull or defective child. Superior children do not call attention to themselves; they may occupy moments of enforced idleness in ways of their own choosing, but they are successful in their work. With a truly human propensity they adjust their effort to the requirements and no one may discover that they are capable of better things. This is part of the reason why we are regaled with stories of what dullards some eminent men were in their school days. If Byron and Goldsmith, Darwin and Gray were unappreciated by their teachers, we may be quite sure it was the fault of the teachers and of their means of appraisal.

The psychologist and the teacher are getting together on this question. The psychologist has simplified his methods of testing and he is training the teacher to use the simpler instruments. On the other hand, school people are realizing with conviction that they need to know and to know in terms of the new methods of measurement, the physical and mental development of the children entrusted to their care. No educational movement which goes to make up the modern trend of educational thought and practice promises more for the good of the children than does the movement which calls for the physical and mental measurement of school children and the adjustment of school procedure in accordance with the facts as revealed by these measurements.

B. R. B.