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The New Psychology in Normal Schools

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tion, in the finding of root, prefix and suffix, and the meaning of each. Then, using these as tracers, they could notice in reading and blackboard exercise such new words as contained the familiar elements. The words separate, preparatory and reparation could form the nucleus of such a group for the use of children old enough to understand their meaning.¹

6. It might be well to devise some exercises for perfecting the automatic circuit. Possibly practice in writing with hand concealed might be of service, use being made of selections that had been memorized.

ADELAIDE E. WYCKOFF.

The Packer Institute, July 19, 1893.

THE NEW PSYCHOLOGY IN NORMAL SCHOOLS.

My paper is a brief plea for the new psychology in normal schools; first, because it is specially adapted to the class of learners found there; and second, because it insures the sort of child study which is needed now as a basis for scientific pedagogy.

Entrance requirements for normal schools must be low enough to admit candidates from the average district schools. Hence the first year is devoted, not to instruction in the art of teaching, but to the common school branches. Fortunately this work now follows the lines of the new education, so that students begin their professional course with observation and discrimination somewhat cultivated, and an acquaintance with inductive and synthetic methods, but lacking the discipline of the severer studies, and without breadth of view. Could they give the next two years to mathematics, physical science and the culture studies, they would, even then, fall far short of that advancement which is required in colleges before taking up psychology. But this science has its present prominent place in normal courses, because we believe that it furnishes a basis for the theory and practice of teaching. To be used in this way, it must be studied by our pupils at the beginning of their professional work, in spite of their scanty preparation.

The psychology which has usually been taught is abstract and rationalistic. The text-books, even when simplified, present matter which the students cannot relate to their own experience. They are not interested. In too many cases the work has become a painful task of word-memorizing. There is no clear showing of what the study of mind can do for the training of mind. Even of those who do the best, it has been said, they know only the general nature of mind, they cannot deal with the individual. Better results can be obtained by a different sort of work. The new psychology affords the more excellent way, not because it is so easy that anybody can learn it—on the contrary, never before was so difficult and expensive a preparation demanded of the psychological investigator,—but because its methods adapt it to the stage of mental growth of the class of students of whom I speak. "The new psychology," says Ribot, "is not metaphysical; it studies phenomena, and it takes as much as it can from the physical sciences. It studies quality and time relations. It has for its object nervous phenomena, accompanied by consciousness, establishing with care the difference between them. The old psychology is a science of

¹It is expected that a few of these groups will be prepared for test in the class-room during the coming year.

pure observation, the new psychology has resource to experiment." The new psychology is so new that its results are yet to be found largely in pamphlets and monographs. There is no text-book, at once comprehensive enough, simple enough, and concrete enough for our students. This is, I believe, a good thing, since it insures the inductive presentation of the subject. The teacher must now select and arrange the topics to be considered, and then, through experiment, introspection, and observation of others, lead the pupils to infer the principles for themselves. We need a psychological library, and much use of books by way of reference, but no text-memorizing. For experimental work in sensation, we have Dr. Sanford's admirable course; for the rest, one could be arranged by the teacher. The laboratory work need not involve a large outlay; \$150 will go a long way, if wisely expended. Where there is a manual training department in the school, many pieces of apparatus may be made there at small expense. Normal schools need not aim at extending the boundaries of knowledge, and so can do without the costly appliances for quantitative determination. The really serious obstacle to success in experimental work is the large numbers in the classes. These should be so subdivided that the teacher could give each student individual attention. Above all, we must have correlation of allied subjects. Physiology and hygiene must prepare the way for psychology, and for a time must overlap. The teacher of the theory of education, the training teacher, should build on the psychology. The teacher of psychology should be able to turn to the model school for concrete illustrations of principles.

This brings us to our second point. All normal psychology must necessarily be child psychology. Our pupils must be taught to study children. Their lack of interest in this work at first is well described by Mr. Russell of Worcester. He says: "Many students come to us with the narrow view of supplying themselves with a handful of cut-and-dried methods. Their idea of teaching is mostly confined to the presentation of certain prescribed subjects, by a logical arrangement of topics and a process more mechanical than intellectual of 'developing' a few commonplace notions and statements relating thereto. To this is usually added some idea of 'raising the standard' in their schools by various devices, among which 'classifying' and 'averaging' play a prominent part. They have not bestowed a serious thought upon the principle that 'learning depends upon the learner.' Their interest in children is as yet potential and latent. They regard them as material for their art to work upon, and want only such as are good." The first step is to put them into a different attitude toward the children. As soon, then, as pupils enter the school, set them to observing, according to Mr. Russell's plan, which is now so well known that I need not describe it. They will have had a year of this awakening work before they take up psychology. As this science unfolds itself, and they begin to understand degrees of accuracy in observation, the nature of reflection, the importance of measurements, and the use of experiments, it will be more helpful to systematize and specialize in their child study. In a properly related course, the department of physical culture will require from the pupils anthropological measurements of children, records of pulse-beats, with reference to degree of fatigue and excitement, school health statistics, observations on color and other signs of health, movements of children at play, and so on, and psychology can build upon these, in its opening study of the relation of mind and body. The modern view that "man is a creature, whose life is the adjustment of inner to

outer relations, that fundamentally the mental life is for the sake of action," makes it wise to take up next instincts, emotions and will. Experimental psychology does not yet cover this field; it is mainly in the observational stage. As a rule, this side of the child's mental life first attracts our untrained workers, and we may count upon a large mass of observations to begin with. Prof. Barnes has shown us how observation may be specialized here. Motor ability may be studied more exactly by tests. Dr. Scripture has described, in the *Educational Review*, two, which anyone could apply. Dr. Bryan's apparatus cost but two or three dollars, and with that, his interesting line of experiment could be repeated. Children's vocabularies should be sought as well as cases of mirror-writing. In sensation many of the tests used in the laboratory may be at once applied by the students to classes of children, especially in touch, hearing and sight. The pitch-pipe, mounted upon a graduated scale, contrived by Dr. Scripture, will enable them to get accurate results in regard to sensitiveness to variations of pitch. For testing color-blindness, my pupils made disks from Prof. Jastrow's description, and found them most convenient. Results should be expressed as far as possible by the graphic method. For attention, we shall accumulate much data during our work in sensation. Tests on divided attention may be applied, and studies made of parlor games, like the so-called "mind-reading," ouija, and others. In association, Galton's or Jastrow's tests are easily made. A great deal may be done in time experiments with a stop watch, or even with an ordinary watch, if enough tests are made. The analysis of children's associations brings out interesting points. Some experiments should be made to ascertain the relation between association, time and age. In primary memory the children may be tested in their power to repeat figures or nonsense syllables. The latter may be so used as to show whether visual, auditory or motor images predominate. Some of Galton's questions on the image-making power may be asked the children. The entire set should be given to the normal class. Taking as a test their curiously unlike answers to the same questions, the teacher may well point out the great differences in mental life, and the folly of supposing that there is any one method of imparting knowledge. The students should collect number-forms and instances of colored-hearing. In memory, many of Ebbinghaus's experiments may be adapted to work with children. As to creative imagination, we are again dependent on observation, as we are also in the important field of childish reasoning.

Such a course as I have indicated will take up all the time now allotted to psychology, but to drop it at this point is to leave all at loose ends, and to fail of a good part of the benefit which we ought to derive from it. We should have, in the last year, a higher course. I fancy it would be better to make it an elective, in which we take a systematic review of the field, discussing topics which could not earlier have been seen in their true bearings. If the apparatus is to be had, let the quantitative enter into experimental work. In many places, students are sent out, in their last year, to practice in the city schools, and thus have a larger field for observation. We may avail ourselves of Prof. Barnes's lines of investigation, or even strike out for ourselves. If normal schools may venture into the work of research, this is proper opening for it. "The fields are white unto the harvest, and the laborers are few."

Will the results from such a course pay for the expenditure of time? I believe that they will. Successful testing and experimenting with children are not easy. The training which the young

workers thus get in patience, sympathy, and insight into childish ways is most valuable. Teachers, thus trained, cannot sink into drudges, nor the work become a tread-mill round; for, as Dr. Hall says: "Though the ground to be gone over each year may remain substantially the same, the children's minds will be seen to be never alike." In their schools, such teachers will be careful gatherers of facts, and thus, each contributing her mite, will help on the day when, through the new psychology, there will be a science of education.

LILLIE A. WILLIAMS.

INFANT STUDY IN THE CLASS ROOM.

In a case where the history of Greek philosophy ran parallel for nearly a year with studies in psychology, it was thought desirable so to correlate the two courses that the development of thought in the race should be traced side by side with that in the individual. As race development takes place on a large scale, and extends over long periods of time, the record is, in one sense, easy for young students to read. The birth of Greek philosophy shows them an infant beginning to make acquaintance with the world about him. As the nursling of Thales and his followers, he finds it a sense-world, a world of water or of air, of hot and cold, moist and dry. With Heraclitus he awakes to its constant motion, and it reveals itself to him as a world of change. Now with Pythagoras he is counting and measuring and weighing, and the world is a world of order and proportion. With Parmenides he probes to find the core of things, of the world and of himself, asking what it is in the knower that knows, and what that is that he knows. So the problem of life grows deeper, and demands a constant increase of resources.

Related to this study of human development "writ large," the observation of unfolding individual life gains in intelligence, while at the same time it contributes in suggestion.

The psychology course opened with a study of the child's first month of life, based upon the observations of Prof. Preyer, and accompanied by reference studies and demonstrations on the brain and the senses. Honest opinions being freely expressed, it soon became evident that Prof. Preyer's infant was regarded as a being *sui generis*, having little in common with the occupants of American cradles. But favoring circumstances made it possible to secure the attendance of a bona fide infant just three weeks old. To the students it was a most significant fact that the child was named James. Upon his arrival, he was surrounded by a dense crowd of spectators, eager to have the text of Prof. Preyer examined at the bar of experiment. It had been conceded that the baby would, in all probability, grimace pleasantly if a glass rod were rubbed between the lips, and unpleasantly if drops of water were sprinkled upon the forehead, yet the actual sight of these phenomena produced a deep mental satisfaction. But the crucial test was successfully met when one eye was opened while the other was shut, and again when one was rolled upward abstractedly, while the other seemed to be gazing at the observer. The child obligingly cried twice, and was twice quieted by the application of a finger-tip in the tube of the ear. Also, he persisted in sleeping most of the time, as if he had had soothing syrup, a fact which was explained according to Prof. Preyer, by the jolting he had received in the