

appraising a child from the same point of view and when the inevitable disagreement arises they argue more or less politely or perhaps dismiss the whole problem by ceasing to communicate with one another. A large number of parent-teacher misunderstandings could be avoided if both parties realized from the outset that they are seeing and judging their common educational responsibility in terms of differing standards and goals.

Both parents and teachers are educators but

their methods, aims and, most important of all, their emotional involvement in their work differ. When they look back on the work of a school year it would be well for them to first look at themselves and ask what was it they wanted for Bill, Mary or Paul. By what standards are they going to judge these youngsters? Only then can they set out to appreciate truly the distinctive contributions each has made to growth and development of the youngster.

☛ *Awareness of individual differences increases understanding*

Peas in a Pod

ELIZABETH MECHEM FULLER

ONE SATURDAY AFTERNOON everyone was gone from our busy household but me. The house is usually so bustling and alive that its quiet was oppressive. I read for a while and then just *had* to get outdoors. I wandered down to our struggling little victory garden which was about to get its first fall frost. There were a few tomatoes and carrots left, and one row of new peas. I picked them all and then decided that shelling peas was exactly the sort of work I needed—no thinking, not hard on the eyes or nerves—as the perfect Saturday afternoon relaxer. The fourth pod ruined all that!

The pod looked just like any other, but the peas within started me thinking. There were five peas—two large and three small—four light green and one brown—two soft and tender and three hard and tough—four fastened securely to the pod and one dangling loosely. As alike as peas in a pod? Well now,

isn't this something! Five peas with similar heredity and the most similar environment one can imagine—yet so different. They remind me of children in a family or schoolroom (here we go). Like the peas, brothers and sisters have similar heredity, and an environment not quite as similar as peas in a pod, but similar nevertheless. Like the peas, too, brothers and sisters are sometimes fat and lean, short and tall, blonde and brunette, tough and tender, dependent and independent. Botanists and geneticists can explain it all in terms of pollen grains and genes and chromosomes and aren't in the least surprised at these differences within families. Botanists will explain that the peas' heredity determines potential characteristics but their environment figures in the development of these characteristics and this environment is not as much the same as we think; for example, in this case the peas farthest away from the stem or point of nurture were smallest—those closest were largest; the toughest (those with best chance for survival) were also closest to nurture. So with children, even where heredity seems similar and they are living in environments with many like characteristics, so many differences remain that they often seem to outnumber the likenesses.

Now multiply these hereditary and environmental variables by the number of children in a classroom—do you still expect any two children to be alike? Like the peas, they may look a bit alike from the outside, but we must not be fooled.

The grouping of children in the classroom on the basis of chronological age has proven to be more practicable than the use of any other single factor of similarity. However, this does not provide a solution to the problem of the individual differences in children, as shown in this article by Elizabeth Mechem Fuller, Institute of Child Welfare, University of Minnesota. Mrs. Fuller emphasizes that recognition of, and sensitivity to these differences in children by the teacher is the quality that must be nurtured and fully developed in education today.



Courtesy Denver (Colo.) Schools

Look-alikes don't live alike

A Study in Contrasts

I know two Johns, both four years of age, both sons of college graduates, living near each other in a large city, attending the same nursery school. They are repeatedly mistaken for each other in the schoolroom and on the playground. John S. is slightly larger than John T. but they bear each other a remarkable general resemblance. A look at the records of the two boys reveals what an unfortunate comparison they provoke. One John has a mental age of three years and seven months; the other has a mental age of five years and six months.

One John has a behavior journal record full of conflicts with other members of the group, extreme emotional outbursts, over-stimulation, notes describing a very short attention span. The other has no behavior journal entries except for occasional crying when he first entered school, and many later reports of positive contributions he made to the group, and of school visits by the parents for observational purposes.

Both John S. and John T. also have been rated for behavior problem tendencies on the Haggerty-Olson-Wickman Behavior Rating Scale. As would be expected from the above description, when rated by his teacher, one received a score which placed him in the 93rd percentile of boys in the general population. That is, he exceeds 93 per cent of other boys in his tendency toward problem behavior. The other's score placed him at the

47th percentile, or slightly below the average for boys in the general population.

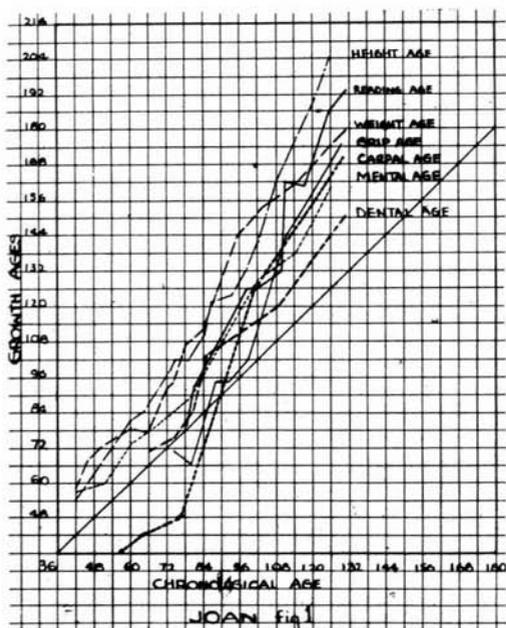
These two Johns, then, who look like twins are actually *UNLIKE*, as were the peas in that fourth pod, and it would be disastrous to treat them as likes. Nevertheless, since they are the same age, they undoubtedly would be placed in the same group in any school, and would be under the direction of the same teacher. We are faced with research evidence that young children need the more extensive social experience which they get from being with other children and that skilled adult direction can best reach most children by placing them in groups. The problem immediately arises as to how to group them.

Complete Homogeneity Does Not Exist

Research reports of the many attempts to group children point toward one conclusion: *There is no such thing as a completely homogeneous group.* If you sort children for one factor they differ in other factors. It is true that there is a positive correlation among traits in children; that is, desirable traits are positively correlated in human beings. Nevertheless, these correlations are low enough to cause each schoolroom group to have such a wide variation in all factors other than the one by which they were grouped that regardless of the grouping method chosen, the teacher must be able to recognize differences and cope with them in her teaching.

In sorting it would, of course, be preferable to add as many other factors as possible (such as social development, physical growth, or mentality) in order to add to the homogeneity of groups, but the addition of these other factors runs into the widespread problem of lack of school personnel or good measurement data to make such classifications possible. With the present school personnel and the present lack of good testing programs in schools, most administrators favor chronological age grouping, and dependence upon individualized teaching methods and free shifting about of the children rather than a set method of grouping to meet the needs of children. Thus, placement of the two Johns in the same age group is probably as good a plan as we have at present.

If we use the age criteria for grouping, and put all of those children together who have lived ten years, we typically have a group of children who differ about three



JOAN Fig. 1

years in any other aspect of growth, and they have lived even those ten years of age which they have in common very differently.

Growth Is Compared

Joan and Nancy illustrate this point. Joan and Nancy are two girls whose growth data were collected as a part of the University of Michigan growth studies.¹ Extensive records were kept over a number of consecutive years in order to study both cross-sectional and longitudinal growth in children. Growth measures are plotted on a graph on which the line of average is represented by a solid diagonal line. Figure 1 shows the growth record of Joan. Her chronological age is shown in months along the horizontal scale. Her measures in other aspects of growth are shown along the perpendicular scale. In Joan's case, the measures included were height, reading, weight, strength of grip, wrist bone development (carpal), mentality and dentition. In the Michigan growth studies all of the above measures are converted into common unit—that of age—so that they can be com-

pared directly with each other. That is, weight in pounds is hard to relate to height in inches, but weight age and height age are directly comparable.²

In looking at Joan's record in Figure 1 we see the solid diagonal line across the graph. If Joan were exactly average in all of her growth measures, all lines would coincide with the solid line. For example, if Joan's reading age were seven years when she was seven years old and it increased exactly one year each year she lived, her reading growth line would coincide with the solid line of average on the graph—we see that it does not—but rather is far above the line of average throughout. The same is true of the rest of Joan's growth—it is all well above average. In comparing Joan, then, with average children at any given age, Joan's life is being lived at a superior level ranging from one to five years ahead of her schoolmates. She is always up there looking down on the rest of her group, physically, mentally, and academically.

In contrast, Figure 2 shows Nancy's growth pattern. As she grows older (plotted along horizontal scale) she progresses very slowly in reading, mentality, wrist bone, dentition, height, weight and strength of grip (plotted along the perpendicular scale) as compared to an average child (represented by the solid diagonal line). She is always down there looking up at the rest of her group, physically, mentally, and academically.

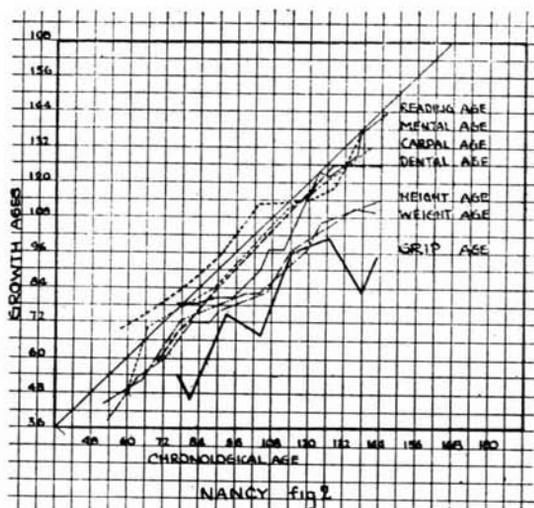
Heterogeneity Remains Dominant

Since Figure 1 and Figure 2 represent two actual children, Joan and Nancy might well be two children who sit side by side in the same schoolroom. If so, their teacher would be faced with the challenge of adapting her instruction and understanding to the entire span of growth contrasts seen in these two girls. It is true that Joan and Nancy do not look alike as do the two Johns, so that the teacher would never confuse them, but it is nevertheless no small task to plan for both of them and also for all of the rest of the children in her room whose growth patterns lie

¹ Olson, Willard C. and Hughes, Byron O., "Growth of the Child as a Whole", *Child Behavior and Development*: New York, McGraw-Hill Book Co., 1943, pp. 200-201.

² References to tables for converting various measures of growth into age units are included in the Michigan studies.

between Joan's and Nancy's. Nancy's most advanced lines of growth (reading and mentality) hover in the area just below average; Joan's least advanced line of growth remains well above average. Thus, except for the period when Joan's strength of grip and wrist bone development measured below average, none of her growth pattern ever overlapped Nancy's. So they *looked* different and *were* different. Joan and Nancy illustrate what a wide variation we get in a schoolroom when we sort on any one basis, in this case chronological age. Were we to sort on the basis of mentality Joan and Nancy would not be in the same room; were we to sort by physical size they would not be in the same room. They represent the extremes when the sorting is done on a chronological age basis.



We could just as well have chosen any other one factor to illustrate our point as to the amount of heterogeneity which remains when you attempt to group children on the basis of any one factor. For example, if we sorted on the basis of mentality alone there would be in the same room whatever range of mentality had been chosen arbitrarily for grouping purposes, and, in addition, each possible relationship with other factors, depending upon the relative position of mentality in the children to their other traits. Suppose we include children with mental ages from sixty-six months to seventy-eight months in a first grade group. There will be a few children whose M.A.'s represent their lowest measured trait (A), a few whose M.A.'s lie near the middle of their measured traits; and a few whose M.A.'s are their most advanced measured trait (C). Thus, if the expected variation within any child's growth pattern is three to five years, the fact that we have the two extreme patterns (A and C above) increases the variation of the group in all traits to the entire range from the lowest measure of the slowest child to the highest measure of the most superior child. The group problem for the teacher is *not* the relative homogeneity of mental ages, but is the heterogeneity of other factors. This variation would be about the same as the difference between Joan's highest measure and Nancy's lowest measure.

Even were mastery of subject-matter the sole aim of grouping for teaching, when we attempt to reduce the range of abilities through homogeneous grouping on the basis of intelligence or general achievement test scores we find that the variability of the instructional groups with references to specific achievement scores is reduced only by approximately twenty per cent.³ It is therefore not the likenesses in children which teachers may be able to get by careful grouping which cause them trouble, but the *differences* that remain.

The "Same Directions" Are "Different"

Individual differences play an important part in every situation faced by a teacher, not just in teaching school subjects. These differences are evident very early in a child's life, indeed long before he enters school. Certainly, they are evident among the youngest children ordinarily taught in groups, the two-year-olds in nursery school. Usually we get a clue from some simple situation, a bit of behavior which is symptomatic of such differences. A teacher's challenge lies in her sensitivity to these symptoms, and her interpretation of them. A short time ago a student teacher was observing a group of two-year-olds in nursery school and the following excerpt is taken from her notes:

³ Cook, Walter W. *Grouping and Promotion in the Elementary School*. No. 2 of Series on Individualization of Instruction. Univ. of Minnesota Press, 1941.

"Miss J. finished reading a story to the children and then said, 'Now, it is time to go to the toilet'. Billy jumped up at once and started to the bathroom; Louise walked dreamily across the room in the opposite direction; Paul and Charles just sat where they were; Joan grabbed the book; Mary went over to Paul to try to pull him up; Susan cried."

Now, ostensibly, these children all heard exactly the same directions under exactly the same circumstances. Why, then, did one get so many different reactions? In the first place, if one knew these children well, it would be obvious that they were not hearing the *same* directions nor were they heard under the *same* conditions. The directions and conditions were both interpreted in terms of the children's individual backgrounds of heredity, environment and experience. Some differences come to mind immediately: Billy, who responded immediately, has an IQ of 128, excellent home and school adjustment, and has attended nursery school longer than any of the others; Louise, whose mind appeared to be elsewhere, has an IQ of 95, comes from a home recently divided by divorce and is convalescing from a tonsillectomy; Paul, who sat still, has just entered school and understands only Spanish; Charles, who also sat still, is three months younger than any of the other children and has lived until two months previously in an orphanage; Joan, who responded aggressively, is being bullied at home by an older sister and her father has just returned home from service, a complete stranger to her; Mary, the teacher's helper, has an IQ of 116, is the oldest child in the group and has a younger brother at home; Susan, who cried, has an IQ of 140, loves stories more than any part of the program.

When these few additional bits of information about "the whole child" are added, the differences in the way the children responded to Miss J. become more understandable, in fact, become good examples of cause and effect in children's behavior. It is true that these few points are superficial and inconclusive as diagnostic factors but they suggest an *approach* to better understanding of classroom problems—an approach which would stress the whole child and his background rather than routines or subject-matter. With this approach, teachers would certainly be less apt to treat any of the above reactions as discipli-

nary problems, and more apt to try to understand them as clues in facilitating child development.

The implications of growth such as we have seen in the two Johns, and in Joan and Nancy, stress the importance of a broad understanding on the part of teachers as to what we really mean when we talk about individual differences, and what to do about them.

The second concern of this paper has to do with differences within the same child. To go back to our original analogy, peas in a pod, one of the peas was green and smooth on one side and slightly brown and shriveled on the other. That is, part of it was perfectly developed and part of it was not.

There Are Many "Lindas"

Similarly, let us look at Linda, age three years and seven months. Teachers find Linda a problem frequently, and cannot understand why. She is a beautiful doll-faced child with a high level of sophistication in her dealings with adults. She initiates adult contacts freely, with such overtures as, "Hello, that is a charming ensemble you are wearing." As a result she gets more than her share of attention, praise, and amazement from adults who are not directly concerned with her adjustment. Linda constantly confuses those about her with her strange mixture of adequacies and inadequacies in meeting situations at nursery school. In one situation, (wherever language and social sophistication dominate) Linda will lead her group and occasionally even lead the adults; in another she will seem woefully immature in her responses.

A look at her brief growth record reveals at least a partial answer. Linda has some areas of growth very well developed and others somewhat slow. At 43 months, her weight age is 32 months, her height age is 35 months, and her mental age is 52 months. That is, even with these few examples, there is a developmental difference of twenty months in the measured growth areas of a child who has as yet lived only 43 months. Linda is too young to have measurable abilities in reading and arithmetic, but one can imagine that there may be considerable variation in her growth pattern as more measures are added.

The difficulty with Linda's guidance lies in the fact that those who work with her must

recognize that she is sometimes behaving as a child of four years and four months (or even older, where her speech is concerned) and at other times as a child of two years and eight months. Nursery school teachers can testify as to just how differently children of these two ages behave. Linda's troubles are attributable to her individual variations within her own growth pattern and to the lack of understanding of these variations by her teachers.

Occasionally, differences within a child may be more apparent than real. If a child lives his earliest years in an environment where his experiences deviate markedly from those most children have, he enters school with what seems to be a very peculiar combination of traits and ability levels. Take Harold's case, for example: At three and a half, he could recognize and identify six or seven symphonies, but could not manipulate ordinary nursery-school materials; he could read 150 words but could not climb any gymnasium apparatus as well as a two-year-old; he could spell two-syllable words but could not talk to or play with another child; he could sit quietly and listen to certain types of music but could not attend during children's activities for even one minute; at times he displayed the concentration and control of an adult, at other times completely lost control to giggle or cry hysterically and lose all motor control; he could name exotic foods and tell how they are prepared but had numerous food dislikes and had never tasted foods which are favorites with most children.

In watching Harold's behavior one might at first be inclined to judge him completely disorganized and irregular in his growth pattern. Upon further observation, however, it becomes increasingly apparent that he makes more than average progress in most of his inadequate responses once he is given the opportunity, under skilled supervision. Harold's nurture heretofore has been in the areas in which his performance is superior; his nurture in the things most children take for granted at three and one half has been sadly neglected. In other words one might almost say he has lived his first three and one-half years backwards. With careful guidance, unless his mental and emotional adjustment has been overly disturbed by his early "forcing", Harold's growth pattern should smooth it-

self out if he lives under a better balanced regime with his contemporaries.

Teachers are therefore faced with the need for being able to distinguish between children who are really "split" and disorganized in their growth and those who merely reflect unusual nurture. The assumption is made that a child's growth reflects both his nature and his nurture inextricably bound together. Adults working with children, then, must refer to both areas to confirm or deny their initial beliefs concerning a child.

It is occasionally difficult for a teacher of young children to see what growth facts have to do with her job. It has been established in recent years that children tend to grow in unified fashion, and therefore, that teachers must be concerned with the whole child to realize any objective—physical, intellectual, educational, or social.⁴ Once a teacher has accepted this viewpoint she henceforth teaches children rather than subjects; teaches each child rather than a group; recognizes the unity of a child's whole existence rather than sees him as solely a classroom organism; *does* with him, but also *thinks* with him and *feels* with him.

Therefore, teachers may be consoled by the fact that Linda and Harold represent the exception rather than the rule, since there is a going-togetherness in most growth patterns; too there are more average children than Joans or Nancys; and few unlike children who look as much alike as John S. and John T. Still the fact remains that there are all kinds of children in the world and *every single one* is too important to be a victim of unsympathetic treatment and mismanagement. Teachers must accept the fact that they will be expected to work with children in groups as though they were similar when in reality they are as different—well—as different as peas in a pod.

⁴Olson, Willard C. and Hughes, Byron O. Concepts of Growth—Their Significance to Teachers. *Childhood Education*: 21, October 1944.

Graphs reprinted from Barker, Krounig & Wright's *CHILD BEHAVIOR AND DEVELOPMENT*; Chapter XII 'Growth of the Child as a Whole' by Willard C. Olson and Byron C. Hughes, published by McGraw-Hill Book Co., Inc.

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