

A CRITICAL EXAMINATION OF THE PSYCHOLOGY OF THE WHOLE WORD TECHNIQUE

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The presence of much confusion and disagreement about the best way to teach reading is an evident fact, undeniable after even a cursory perusal of the literature in the field. There appears a veritable constellation of approaches, each of which can claim success by their advocates either in a carefully controlled laboratory experiment or in the widespread application of the respective techniques. The truth that many children learn to read eventually, needs no elaboration. It is however, an indisputable fact that literally millions of children have not, and are not, learning to read and can be classified as functional illiterates or semi-illiterate.

Some educators hold that those who fail to learn are the "slow learners," the culturally deprived, the unmotivated, the children with specific reading disability. These attempts to rationalize are only vaguely disguised efforts to justify our failure to seek out and find solutions to a human problem of the gravest proportions and consequences - the failure of millions of Americans to learn to read adequately or at all.

The problems observed in daily association with retarded readers, whose growth is stunted in the school oriented society in which we live, are problems that cry out for solution. The effects of school failure on millions of human beings is having a cumulative effect upon the social, economic and cultural structure of our country that is difficult to assess. The cataclysmic effects evident because of illiteracy and ignorance cannot conceivably be the result of a single specific cause. Nevertheless, reading retardation, with all its resultant failure, is a significant contributory factor in the whole spectrum of current social upheaval.

Education has made substantial contributions in the struggle to cope with the realities of life as it has evolved in this century. But the field of reading instruction has persistently resisted efforts to develop a consistent, unified approach truly agreed upon as the most satisfactory method for the majority of children.

The current approach to the teaching of reading is generally thought of as being a synthesis of the best features of the phonetic and the whole word methods. This is a false assumption, for phonetic elements are not introduced until initial sight vocabulary has been firmly established. A stimulus-response pattern has been established during the child's first exposure to printed symbols which will certainly exert a strong, if not dominant, influence on all further teaching.

In a recently published text on reading instruction, Heilman¹ writes that;

Basal readers in wide use today embrace two major premises: (1) that the child should learn a number of words as 'sight recognition words' before attempting any type of word analysis, and (2) that the introduction of new sight words should be systematically controlled. At the present time, most children in American schools are taught by the 'whole word,' method. They learn words as units even before they are deliberately taught the names and the sounds of the letters making up the words. The aim of instruction is to have the child learn a number of words as sight words before attention is paid to the analysis of words, (p.104)

Harris² (1959) , In another and more widely used text, states that “Every popular set of readers in America today uses a primary analytical or global approach in the teaching of word recognition, supplemented by instruction in word analysis techniques after the sight vocabulary has been started. This seems to be a psychologically sound and experimentally justified procedure.” (p.83) Harris⁸ (1963) writes elsewhere with regard to visual perception, “Current methodology in the teaching of reading assumes that it is easier and faster for a child to learn to respond correctly to the appearance of a word as a whole than to perceive part by part and put the parts together. This viewpoint originated from the pioneer work of Cattell, who demonstrated that, on the average, words could be recognized in a shorter time than single alphabet letters. This was reinforced by eye movement photography, which showed that in good reading, words are perceived as units or in groups, and was given a theoretical base by Gestalt psychology, which emphasizes the primacy of the whole over the parts.” (p.50)

Every text in the area of reading instruction that was investigated asserted confidence in the ability of the vast majority of children to learn sight words as wholes, no matter which overall approach was emphasized. Even McKee³, who stresses the need to develop an early understanding and ability to identify sounds and letters, advocates the early introduction of a sight vocabulary. (p. 39) He bases the need for identification of letters, not as an absolute prerequisite for understanding the component parts of the word, but rather to provide cues to be used in combination with contextual clues.

The basic premise underlying methods of instruction in the United States then is based principally upon a belief in the ability of the individual child to learn a basic core of sight words prior to, or simultaneous with, instruction in a variety of other analysis skills. Acceptance of this premise must of necessity be predicated upon three basic assumptions, each of which must be operative if the approach is to succeed:

1. that the Gestalt theory of learning and perception is an acceptable base upon which to develop methods of reading instruction.
2. that the child has sufficient visual maturity to perceive language symbols accurately.
3. that the child has complete and unfailing directional control at the outset of reading instruction to permit consistent, undirected left-right viewing of the materials presented to him.

It is held here that there is sufficient doubt about the acceptability of each of these assumptions to warrant further intensified research. Only the first assumption will be discussed however, for it takes precedence and is decisive to the entire whole word approach.

The complete faith of educators in the look-say approach to reading indicates an incredible naïveté. They would have us believe the child, in his state of relative maturity is able to perceive both visually and aurally, the minute differences in words such as: want-went, then-them, to-at, from-form, etc. Further, they assure us that the child possesses a visual and auditory memory capable of preserving and cataloguing a great number of words of similar configuration without additional word attack skills. A statement by William S. Gray exemplifies an apparent willingness to accept a tentative conclusion as proven fact. He writes:

The first time a child sees a printed symbol for a word he should establish a direct association of sound and meaning with the printed form. These associations are easily established if the printed form is shown to the child as the spoken word is used in a meaningful situation. For example, if in a discussion of how birds differ from other animals, the children suggest that ‘they are covered with feathers,’ the teacher who presents the printed word feathers at this point has insured associations of sound, meaning and form. (p.45)

Aside from any pedagogical criticism as to the impossibility of introducing vocabulary in this slow and artificial manner, the statement can only be true if we are absolutely certain that what the child sees and hears as “feathers” and what the teacher sees and hears as “feathers” are one and the same. To assume that the sensory experiences of the teacher and those of the child are exactly the same is an extremely untenable position to hold, in view of the immensely complex number of variables present in every perceptual experience.

Acceptance of the sight method is predicated almost entirely upon theoretical evidence provided by Gestalt psychology which “emphasizes the primacy of the whole over the parts.” The existence of any contrary theory of learning appears to have been overlooked or relegated to the junk pile. Gestalt psychologists propose a belief in the idea that perception is “that function of the organism whereby it responds to a given constellation of stimuli as a whole; the response itself being a constellation, or a pattern, or gestalt⁵.” (p.3) The ability to perceive wholes immediately, rather than as a result of gradual recognition of the parts, provides the “raison d’etre” for the whole word approach. Consequently, initial instruction is primarily concerned with the larger unit, the word, rather than with the smaller unit, the letter.

If the premise that the child learns words at sight solely as the result of a direct apprehension of the whole or "gestalt" is true, then the approach is logical and those who do not learn may be explained in terms of faulty perceptual skills. The acceptance of this premise and its conclusion as the only ones possible, however, remains an unproven thesis.

One of the most prevalent errors of children suffering from both moderate and severe reading retardation is the inability to differentiate between words of similar configuration. Even normally proficient readers manifest occasional confusion with words of this type. Retarded readers consistently make errors of substitution and of word and letter confusion, even after repeated and determined efforts at remediation. An immediate and apparent contradiction to the theory of “gestalt” becomes evident in view of the fact that the most successful techniques which have been developed for the retarded reader are those that utilize a letter by letter approach. These methods stress the individual parts of the words, either by name or sound, coupled with efforts to develop a consistent directional pattern. The end result of training is improved ability to apprehend the word as a whole because of a greater familiarity with the component parts.

The Fernald Keller technique⁶ (p.331) and the highly structured approaches advanced by Gillingham¹¹ and Bloomfield and Barnhart¹² are typical of attempts to reorient disabled children and adults with an improved and systematic letter by letter approach. Variations of this approach are evident in the Montessori sandpaper letters and a variety of tracing techniques being researched at present.

Gestalt psychology advances the theory that perception is dependent upon “a pattern of excitation whose locus is unimportant.” Hebb⁷ (p.17) Application of this principle to reading places prime concern with the overall configurational pattern of the word rather than with the individual characteristics of the separate letters. If this concept of immediate perception is true, it would appear that there is present in the school population a significantly large number of otherwise normal individuals with faulty perceptual ability, ranging from moderate to severe. If we equate failure to learn to read with inadequate perceptual skill, we must then explain those who do learn as being endowed with average or superior perception.

The widespread use of the look-and-say method seems to have gained its tremendous momentum principally because of its quick initial success with large numbers of children. The kind of post facto reasoning that points to successful results as proof of a particular theory is totally unscientific. Children do not mature in a vacuum, but rather have been exposed to multiple and uncontrolled external and internal influences. Using successful results of one or

more trial experiments as a measuring rod, might not statistics be advanced to show that experience, motivation, environment, intelligence or heredity are all equally essential agents to use in explaining successful results?

To one engaged in the teaching of large numbers of disabled readers, there develops, over a period of time, an awareness of an indistinct pattern of disturbance which is evident in most reading disabilities. Their errors, though not easily defined or limited, have a definite repetitiveness at all levels, from the primary school child to the adult non-reader. There are persistent indications of confusion which can best be described as being amorphic and unpredictable. The main point of this article is that many children who are becoming reading problems should not, would not, become problems if exposed to a more logical, less confusing approach to reading.

Because of extreme dissatisfaction with the explanations of this confusion offered in reading texts, a dissent is hereby registered. It is recognized as a dissent which is contrary to the position held by the vast majority of reading experts in the United States. Disagreement with prevailing opinion is based upon a belief in the possibility that the Gestaltist conceivably were mistaken in assuming that the innate capacity to perceive a "primitive unity" in figure-ground relationships was the only factor involved in perception and subsequent learning. This is not the lightly arrived at conclusion of a single reading teacher, disturbed at the apparent contradictions between theory and practice. The existence of another, and opposing, theory of perception and learning is an established fact. It is based upon extensive research and reaches conclusions eminently logical and substantiated by the best available research. The conclusions to be drawn from this theory appear to have significant application to current pedagogical conceptions regarding reading instruction.

Dr. Donald Hebb of McGill University, is the principal proponent of a theory of initial learning that is diametrically opposed to Gestalt theory and its presumption of "the primacy of the whole over the parts." He has advanced a neurophysiological theory of learning and perception which concludes that "the course of perceptual learning in man is gradual, proceeding from a dominance of color, through a period of separate attention to each part of the figure, to a gradually arrived at identification of the whole as a whole, an apparently simultaneous instead of a serial apprehension." (p.33)

Hebb is asserting that learning occurs because of man's ability to initially perceive integral parts and then proceed serially to an identification of the whole. "It is possible that the normal human infant goes through the same process (serial apprehension), and that we are able to see a square as such in a single glance only as a result of a complex learning. The notion seems unlikely, because of the utter simplicity of such perception to the normal adult." (p.33)

The idea that a simple cause, in this case the premature learning of whole word forms, could be an inhibiting factor of such monumental proportions is incredible, and yet that is exactly what is being proposed. Any structure built upon a faulty foundation is bound to have weaknesses distributed throughout, which are seemingly unrelated to the basic defect. If, as Hebb contends, perception is gradual rather than immediate, the inculcation of a core of sight words at the outset of instruction is the wrong approach to adopt as an initial step in the accumulation of reading skills. This practice establishes a stimulus-response activity which tends to draw attention away from the recognition of the component parts and places it instead on the larger unit, the whole word. Initial learning experiences are extremely strong in their influence and the perceptual response pattern established at this time is difficult to reverse or modify.

A valid comparison can be made here by anyone who has ever been exposed to an auto expert who is able to identify any year or model automobile at sight. Surely, we recognize these same

objects, but does the simple recognition of configuration enable us to perceive immediately the minor differences which distinguish one car from another? The child, in like manner, may perceive the configuration of a word. But is this mere experiencing of Gestalt sufficient to enable him to perceive the identifiable traits that make a particular word unique among all others? Thousands may view a horse race, but only the announcer has established sufficiently careful identification of the jockey's silks to permit an accurate description of the placement of the horses.

A serious objection to the entire thesis arises at once for it is evident that many children are able to identify words with varying degrees of excellence at the initial stage of instruction. The apparent ease with which some learn may be a very misleading factor, for it has a two-fold effect. First, it tends to draw attention away from the possibility of variable factors within the population and the existence of other possible causation.

An answer to this objection and an explanation of this apparent contradiction lies in another possibility. A prior knowledge of the letters of the alphabet, a factor of undetermined significance in the total school population, would provide an obvious and adequate reason for their success. Many teachers have long noted a correlation between early reading success and exposure to alphabet training prior to or during initial reading instruction. More to the point than the success of the method initially, is the potentially negative aspect of that existent situation in the schools and in the country in general. Significantly large numbers of people have not learned to read adequately using present techniques. A method which enjoys almost universal acceptance, should contain within it a satisfactory explanation for this tragic inadequacy. Those who experience the kind of difficulty being discussed here can be classified in two general categories: first, children who are frustrated in their initial exposure to whole words and fail to develop a consistent vocabulary of more than a few words. Instruction for them has to be individualized and highly structured if any degree of success is to be forthcoming. Usually this help is not available or the extreme nature of the problem is not recognized. It is from this group of children that the most frequent cases of reading disability develop.

A second category may be generally classified as including children who appear to develop an initial sight vocabulary but meet with extreme difficulty at a later stage of instruction. Their difficulty is manifested by an inability to remember with consistency, words of similar configuration, such as the following *her-here-where-there, then-when, what-that-this-those, how-who-why, were-where-wear-wore, of-for-from-off, to-at, fire-five-fine*, etc. Without specific help, the condition deteriorates into varying degrees of confusion and a complete inability to cope with the increased load of reading tasks in the upper elementary and junior high schools,

To understand how this insidious confusion could develop and inhibit the ability to learn to read, it is necessary to explain briefly Hebb's belief in the independent factors of "unity" and "identity" in simple figures. Both the Gestalt psychologist and Hebb accept the existence of a "primitive unity" in figure ground relationships which can be defined as "that unity and segregation from the back-ground which seem to be the direct product of a pattern of sensory excitation and the inherited characteristics of the nervous system on which it acts." "An area thus sensorily delimited is seen as one, unified and distinct from its surroundings, by any normal person." (p.19) "There is a primitive or innate figure-ground mechanism which permits the human organism to perceive and delineate foreground from background." (p. 21)

Both schools of psychological thought accept the existence of this mechanism which enables the organism to perceive "primitive unity" in a figure. It is at the next step in the perceptual process that the point of maximum divergence appears. Hebb disagrees with the theory that perception is wholly innate and unaffected by learning and experience. He postulates the

existence of “non-sensory” figures which are influenced by learning and experience. Non-sensory figure-ground organization is defined as “one in which the boundaries of the figure are not fixed by gradients of luminosity in the visual field. It is affected by experience and other non-sensory factors and it is not inevitable in any perception.” (p.21) The introduction of the idea of non-sensory organization paves the way for associative learning based upon experience. Thus we are able to “see” a phantom house rising amidst a non-existent grove of trees as we stand before a newly acquired, barren plot of earth. There is no direct sensory stimulation or delimitation of figure from ground, but we are able to visualize as a result of prior learning from an infinity of previous encounters with sensory experience.

The development of the capacity to act upon learnings is further advanced in the concept of “identity,” which is defined as “referring to the properties of association inherent in perception.” (p.26) “There is always the possibility that perception has a partly innate, partly learned organization; and that besides the figure that has ‘primitive unity’ there are ‘non-sensory figures’ in which experience has an important role.” It is also important to see that the argument against any effect of experience on perception often requires the assumption that any perceived figure is perceived as a whole, in all respects.” (p.24)

By “identity” then, is meant the ability of an organism to profit from experience and make the associations necessary in the acquisition of independent learning. It differs from the concept of “unity” in that unity denotes primitive sensory recognition, while “identity” of component parts is necessary for acts of synthesis, analysis and judgment. Thus when a child is exposed to more elaborate variations of language, if he has perceived at the outset only a primitive sensory unity in sight words rather than a true identification of the whole through a recognition of its serial parts, he would be unable to differentiate later between words of similar configuration.

For example, the child referred to in the second category may perceive the word fire initially as a primitive sensory configuration, while an understanding of its component parts is not present necessarily. No difficulty would be experienced as long as the new words introduced did not have a similar outlining configurational pattern or shape. But when a word such as fine or five was introduced, the organism could be confused without a prior, well developed ability to “identify” the serial parts and take note of the real differences which exist. To the theoretician, this may not appear to be an insurmountable obstacle to overcome. But to anyone who has ever struggled to reverse a strongly embedded stimulus-response pattern, complicated by a large number of similar confusions, it is a formidable and inhibiting factor that effectively prevents the acquisition of new learning.

A look at the list of vocabulary in any basic sight list will indicate the great number of words which lend themselves to possible confusion. The problem becomes even more insidious and divisive in its effect when we remember that the basic words which cause the most confusion are the service words. If enough of these essential “cue” words become confused, a condition results which is positively debilitating and can best be described in the medical sense as being massive. For the visually immature child referred to in the first category, the premature introduction of sight words is a traumatic experience of tragic consequences. These unfortunates are introduced to a series of meaningless figures that have neither consistency nor pattern. The resultant confusion and psychic damage accruing to this type child, by continued and persistent attempts at whole word instruction is possibly irreversible. Unless the damage undone by retraining at such time when maturity became stabilized, the child might never be able to profit from associative learnings ordinarily arising out of a proper identification of the parts. Mosse⁹ has written that “The whole word method does its harm by being applied too early.” (p.94)

There are other parallels to be made that are in keeping with the theories of Hebb and which seem to contradict the idea of “gestalt.” Munn¹⁰ in his text on psychology, refers to speaking as a “complex motor skill as well as a symbolic or verbal one. It is acquired partly on the basis of reflex vocalizations which appear during early infancy and through their conditioning, but also on the basis of imitation and trial and error activity. Ability to make combinations of sounds which closely approximate those of adults (namely doll instead of da, the original vocalization) develops gradually. There is no doubt that maturational factors are involved in this development. Vocalizations produced by adults cannot be copied by the child until auditory-vocal mechanisms, including their cerebral connections, have sufficiently developed. Nevertheless, it is obvious that children learn to speak, just as they learn other manipulative habits. Saying the word, ‘doll’ for example, calls for a complex integration of lung, throat, mouth and tongue movements in properly timed succession.” (p. 212)

The learned skill of speaking is not then based necessarily on the immediate perception of words in their entirety, but occurs as the result of a long and involved process of experimentation by the developing child, a process which eventually results in the reproduction of wholes composed of individually learned sound elements. The process of speech seems to depend upon such a process, one which Hebb refers to as “serial apprehension.”

Munn also refers to “habit hierarchies,” and he states that “many complex skills, both motor and verbal, involve integrations of simpler skills. Take typing, for example. One first learns to hit the correct keys. These learned responses may be designated letter habits. Letters like t, h, and e instead of eliciting noticeably separate responses, arouse a single response. The individual looks at the word ‘the’ or thinks it, and the separate responses seem to take care of themselves. After a while, phrase habits appear. Common phrases like ‘Very sincerely yours’ are typed without the typist having to pay any attention or to either the separate letters or the separate words.” (p.213) If one speculates about the significance of the process involved in learning to type, the parallel is immediately evident. The process develops from letter response, to word response, to phrase response. The progressive stages observed may conceivably be a recapitulation of the serial process which ultimately results in the acquisition of reading skills. The actions are gradual and integrative, with each step dependent on the applications which the organism makes of the complex interrelationships learned by practice, and the influence of an infinite number of possible variables within the specific individual.

The hypothetical questions arising as a consequence of the proposals made here are legion. Is the existence of large numbers of adequate readers proof of the efficacy of the whole word method, or could it be equally speculated that their level of performance might have been higher with a different instructional approach? Are the problems of emotional upset, dropout, and the increased need for high school and college remedial classes correlated with unsatisfactory initial reading instruction? How large is the proportion of the school population which has not acquired sufficient maturity to enable them to perceive “unity” and “identity” in initial sight words? Are the numbers of children who have had prior experience with the individual letters of the alphabet significant enough to justify the use of a method that is absolutely dependent upon the complete identification of those individual letters as a prior requisite skill? Is the inability of large numbers of children to differentiate between words of similar visual and auditory configuration the consequence of a stimulus-response activity which has been reinforced by continuous faulty perceptions? Are the maturational factors operative in visual perception the same as those used for auditory perception? Is the ability to hear words as wholes only an apparent immediate apprehension, or is auditory perception based instead upon perceptual experiences with the individual sounds of the syllable components of language? Is the difficulty which many children

experience with phonics due to an exposure to the whole word before an adequate auditory and visual identification of the parts was established?

The crux of the problem revolves around the inability of the mature adult mind to comprehend the complexity involved in the various processes of perception, an act which appears to be essentially simple and immediate.

The dearth of laboratory subjects who are in the initial stages of perceptual development and still able to describe the process is an inhibiting factor of no small consequence. The resolution of the problem can only be arrived at through the administration of a controlled experiment which would test the validity of both approaches to initial reading instruction. Any experiment such as suggested must involve large numbers of testees if the results are to be conclusive.

Nevertheless, if there is the slightest hint of uncertainty about the ability of children to perceive whole words prior to learning the alphabet, the basic component of our language system, then we must find out and find out quickly. The problem should not be a question of if, but rather when and how. If there is any doubt in an area as sensitive and crucial as the basic techniques used in the initial exposure to the printed word, the course of action should be evident. The search for truth will never be served by vacillation and indecision. Education must never be allowed to become a static, dead thing, satisfied only with past ideas and concepts. It must strive persistently to be objective and honest in accepting the possibility of change when change is mandated. The worst possible evil that could befall education is the stagnation that is the inevitable end result of self-satisfaction. If we are to continue to grow socially, economically and culturally, education must remain a dynamic, living force, true to the ideals of those curious, questioning minds that helped to shape the structure of democratic education as it exists today.

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