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A STUDY OF THREE NINE-YEAR OLD BOYS, RETARDED IN
READING, WHO WERE TAUGHT READING, WRITING,
AND SPELLING BY A REMEDIAL TEACHER

A Thesis
Presented to
the Graduate Faculty
Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

by
Emily Ellen Leslie
June 1966

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APPROVED FOR THE GRADUATE FACULTY

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

The remediation of reading disability with its related lack of skill in writing and spelling is of prime concern to teachers and parents of a child who is deficient in reading. Such a child is host to a large variety of difficulties, and these problems increase as he continues through school, unless he has help. To assist these children is the work of the remedial reading teacher.

I. THE PROBLEM

Statement of the problem. The purpose of this study was to determine the methods and materials best suited to the improvement of the reading, writing, and spelling skills of three boys, and to discover and alter, if possible, the factors contributing to the reading deficiency and lowered school achievement.

The subjects of this study were three boys deficient in reading, writing, and spelling skills for their grade placement. They were taught for a period of six weeks. Each boy received individual instruction for thirty-five minutes daily. Case Number One was in Grade Three, retained once in Grade One; Case Numbers Two and Three were Grade Four pupils.

II. DEFINITIONS OF TERMS USED

Remedial teaching. Good (7:553) defines remedial teaching as special instruction that is intended to overcome in part or in whole any particular deficiency of a pupil not due to inferior general ability.

Remedial pupil. There are many definitions of what qualifies a child as "remedial". Kottmeyer (14:1) concludes that a pupil becomes "remedial" and needs particular help when he cannot participate profitably in classroom learning which involves the use of textbooks.

Harris (3:315) would consider the child remedial or disabled when the child's reading is significantly below what is normal for both his grade placement and his mental development.

Johnson (12:415-6) considers emotions important. He suggests that there will continue to exist some children for whom regular classroom instruction will not be suitable. These are the remedial cases and severe corrective cases, especially those in which emotional involvement is an important factor.

Case method. This method of study, according to Good (7:75), is a diagnostic and remedial procedure based on a thorough investigation of a person in order to shed light

upon and to acquire knowledge of his history, his home conditions, and all other influences that may cause his maladjustment or behavior difficulties.

Phonics method. The term "phonics" refers to speech sounds corresponding to letters, letter groups, and syllables in words. It is the study of word-sound relationships in reading and spelling and the use of this knowledge in comprehending or writing words. Hildreth (11:335-8) suggests that Noah Webster invented phonics toward the end of the eighteenth century as a tool for pronouncing words. Until then, spelling out the letters was the sole means by which children were taught to attack words. Various systems, or methods, for teaching sounding have been devised. Hildreth advocates the "newer method" which trains pupils in the identification of phonetic elements in whole words. The word is observed as a whole, then the parts are seen as components of the whole. Two other systems in use at present are the "single-letter phonics" and "word-family phonics."

Whole-word, or Look-and-Say method. The whole-word method depends upon the use of perceptual and context clues to achieve complete mastery of a sight vocabulary, according to Torgerson and Adams (27:251-2). After the child has a fairly large sight vocabulary, he is ready for more direct instruction in phonics and word analysis.

The whole-word, or look-and-say method, was in favor from the 1920's until around 1950, but was still a controversial method. Hildreth (11:194-6) explains that part of the method was often the use of experience charts and picture clues. She also explains the advent of the picture dictionary in 1924 which provided a new device for teaching whole words through the association with pictures. The term, Look-and-Say, came from the British when the publication of Dr. Winch's book, Teaching Beginners to Read in England, 1925, was brought to America.

CHAPTER II

REVIEW OF THE LITERATURE

The causes and remediation of reading difficulties have long been a concern of educators as well as other specialists who have reason to be concerned with the welfare of children. Many books have been written and much research has been done on this subject. This review will be confined to the literature that is directly related to the causes of the reading retardation and its related disabilities in writing and spelling, and the usage of recognized procedures and materials now in practice to promote improvement in these three related areas. It will further be restricted to the literature that will have direct bearing on the needs of the three case-studies to the extent that they are known.

I. LITERATURE ON SOME BASIC PRINCIPLES OF CURRENT READING INSTRUCTION

Linguistic View

For several decades the controversy between phonetic training in reading and the "whole-word-look-and-say" method has been going on with strong supporters for each curriculum. Bronstein and Bronstein (3) present a historical resume of the conflict and note implications for reading teachers. They consider that reading is first and foremost a language

process, and in order for teachers of reading to be successful, it is necessary for them to make a serious study of phonetics and linguistics. In order to understand the rise of the linguistic view in education, parts of the study are included in this paper.

According to the Bronsteins, the history of reading in the United States can be divided into four parts: (1) The pre-revolutionary period when the goal in teaching reading was predominantly religious. (2) The early nineteenth century when the standardization of the American language was of primary importance. This was the day of the Blue-Back Speller. (3) The late nineteenth century, when graded readers were introduced. The McGuffey Readers were but one of several different series. (4) The turn of the century when universal education began and disciplining the mind and "enhancing culture" became stressed.

Dolch (3:26) was concerned about the lack of phonics training. In his book, The Psychology of the Teaching of Reading, 1931, he questioned:

. . . the advantages of phonics in the first years may be and often are discounted by teachers, but the question is, without phonics in the early years, how will the child acquire the sounding methods he ought to have later?

However, according to the Bronstein study (3:27), the "look-and-say" method was predominant in American schools for the next two decades.

Roger Brown (3:29), in his book, Words and Things, 1958, gives Rudolph Flesch, author of the highly publicized, Why Johnny Can't Read, credit for causing some of the pressure that in time produced changes in the teaching of reading.

Bronstein and Bronstein (3:29) cited one outstanding example of the consequence of Flesch's attack, which was a conference of reading experts called by James Bryant Conant, held September 22 and 23, 1961, and supported by the Carnegie Corporation of New York. According to Learning to Read: A Report of a Conference of Reading Experts, p. 1, the meeting was "primarily aimed at preparing a public statement as to the place of phonics in a reading program and the constituent parts of such a program." Their conclusions were that there was a place in the reading program for the following, as found on pages 8 and 9: (1) Learning to respond to the phonic (sound) clues provided by the letters standing in the word. This skill is usually spoken of as two separate skills: (a) phonics and (b) structural analysis. (2) Learning to recognize words by the meaning clues provided by the other words standing in the material being read. They supported neither of the extremes, the "no-phonics" or the "all-phonics" programs.

The Bronsteins continued with a discussion of John B. Carroll's book, The Study of the Language, published in 1953. This discussion gives special attention to the possible

implications of linguistic science to educational problems from the kindergarten to the post-graduate level. Carroll corrected such misconceptions of Dr. Gray and other reading specialists as to the belief that the linguists would denounce the learning of words as wholes in the early stages. Carroll, they say, (3:30-2) is aware that:

. . . the linguist would merely wish to give the child every kind of assistance in developing word perception skills; he would regard instruction in the nature of sound-symbol relations as a highly effective kind of assistance.

The major findings, viewpoints, and conclusions in the Bronsteins' study (3:33-4) were as follows:

1. Language is a system of spoken symbols represented by written symbols.
2. The unlocking of meaning in the process of reading occurs by going from the printed word through the spoken form that is already a part of the reader's vocabulary.
3. Instruction should include the learning of the segmental and the suprasegmental sound features plus the grammatical signals that are an inherent part of the spoken language.
4. Words alone don't make sentences, but are merely one element in a complex series of signals that in combination can indicate a sentence has been spoken.
5. The training of teachers of reading must include the serious study of phonetics and linguistics.
6. The oral usage of children is far more advanced than the language used in their readers and greater knowledge of their speech will lead to the construction of better textbooks.
7. Both experimentors and classroom teachers also must realize that the reading problems of native and

non-native speakers and individuals within the same nationality may differ because of language patterns.

Word-Wholes

Heilman (9:115-6), Yoakam (31:12), Hildreth (11:137-40), Harris (8:169-88), Kottmeyer (14:113-15), and Orton (16:55) all concur that the beginning stages of reading can benefit from the teaching of word-wholes. They also concur that word analysis is important as a means of developing the ability to work out the recognition of a new or a strange word. Hildreth states:

. . . obviously, no form of presentation to the exclusion of any other is recommended for word practice to insure meaningful learning. The more forms of presentation the better to insure re-inforcement in learning words.

Orton (16:55) is more concerned with remedial teaching, but his view is the same as Hildreth's. He summarizes all the approaches into two basic principles: (1) Start the language training with small units which the pupil can handle easily and proceed by orderly steps from the simple to the more complex. Be sure to teach the blending of the separate units into meaningful wholes. This approach can be applied to speech, handwriting, and motor skills, as well as to reading and spelling. (2) Use all sensory pathways to reinforce the weak memory patterns and to strengthen one another. Combine the eye, the ear, and the hand, and always work toward the over-all grasp of meaning.

Hildreth (10:29-30) says that the perfection of word sounding skills takes several years.

Learning the sounding trick for reading is a developmental process allied with, and dependent upon all the other components of the total reading process. Sounding in reading is a subtle and complex process in itself. Maturity in sounding requires the ability to identify the familiar sounds in new words quickly with minimum vocalization, and to use partial sounding deftly and swiftly in conjunction with context clues. By any system, sounding in reading is perfected only through steady practice during a period of several years.

Oral Language

Children from low socio-economic homes have been found to be lacking in language facility in school. Project Head Start, a federally financed program involving over 560,000 four, five, and six-year-olds for an eight-week program in the summer of 1965, was designed to teach these children to use their five senses, but language development was especially emphasized, according to the National Education Association Journal, October, 1965.

An earlier program of note was the Higher Horizons Program of New York City. Morris Krugman describes it as beginning in 1956, and through its success, extending to sixty-five schools in that area by 1961. Those children in the program who were in the high school groups received two English classes daily because their greatest difficulty was in written and spoken English. This early program also

recognized that efforts to overcome cultural handicaps must begin early.

The children enrolled in the above and similar programs are the children of the poor people in the United States. They include Negroes, Puerto-Ricans, Mexican-Americans, European immigrants, and white people from rural southern communities in large numbers. Even though they may speak English in the home, it is usually not the English of the American school.

When English is the child's second language, it presents difficulties in learning. Children learn to speak a language in their homes through association with their parents and others. This is the "mother tongue" which tends to persist through life as their chief medium of thought and communication. Learning a second language so that it can be spoken effectively is difficult unless it is learned under conditions similar to the first one. The difficulty in learning increases with the amount of isolation from the natural contacts with those who use the language well.

Soffietti (23:222-26) describes the "linguistic accents" of those using two languages. These are due to various forms of interference between the patterned habits of the mother tongue and those of the second language with results of distortion, substitution, or omission of speech sounds, or grammatical structures, or both.

"It is only by living in the culture where the language is spoken that the full meanings of its utterances are acquired," states Soffietti (23:222-26).

"The non-English-speaking child," states Hildreth (11:59), "tends to learn to read at the rate at which he learns the new language, and no faster." She says that the learning difficulties are proportional to the distance between the child's language and the language of the reading lesson. Children who are immature in formulating and organizing their oral expression are slower in learning to read by ordinary methods in regular class groups.

Hildreth (11:61-2) gives the following suggestions as to the relationship between reading and oral expression:

1. There is little point in teaching a child to read until he can use sentence language in conversation.
2. It is unsafe for the reading text to run any considerable distance ahead of the child's oral language expression; otherwise he is virtually trying to learn a foreign language and valuable instruction time is lost.
3. Language training should accompany reading instruction every step of the way. A linguistic background for reading lessons should be continuously built at each stage of growth.

4. Every reading lesson should be an extension of language and a means of developing the child's linguistic skills.
5. The child's comprehension of speech and his oral use of language should be checked frequently. Appraisal of the linguistic competency of all slow learners and language handicapped children should be a part of the diagnostic and remedial program.
6. More oral work should be provided in teaching beginners and handicapped pupils.
7. Some of the effort expended in teaching slow learners by dint of drills and devices might be better expended in working on the development of oral language and comprehension.
8. More attention should be paid to aural comprehension as a prerequisite for beginning reading. Language work should include ample experiences in listening with full comprehension.

Early Instruction

When to start a child on a program of remedial instruction is often dependent upon a number of factors other than the actual needs of the child. Finances, the availability of trained teachers, space, school policies, and the value placed on a remedial program must all be considered, and any

one could keep the child from the help he needs. Kottmeyer (14:2) feels that it is foolish to begin before the fourth grade. He contends that,

Adjustment of instruction and of learning material is now so common among teachers in the first three grades that many pupils who need long readiness programs or who progress slowly during the early stages of their reading instruction often gain skills much more rapidly and recover ground during the second or the third year of school.

Harris (8:317) discusses the remedial reading case as follows:

The child is usually such a poor reader that the work of the lowest reading group in the class is still well above his frustration level, so that he makes little or no progress in the group lessons. He needs so much highly individualized help that many competent teachers are unable to meet his needs in a classroom situation. Often the picture is complicated by the presence of interfering handicaps and by emotional problems that require special attention.

Heilman (9:387-8) is concerned with the view that the reading problems will disappear with time.

Perhaps one reason why teachers and schools do not get to reading cases earlier is the belief that these problems will disappear with passing time . . . Others, when ignored, become stubborn, severe, complicated problems . . . When children with adequate ability fail to learn to read when exposed to the usual classroom procedures, they need help quickly.

Eisenberg (16:5) argues in favor of providing extra help and special instruction even for those not actually in need of them in order to be certain that optimal help is provided to those who require it.

Even though it may be expensive and extensive, states Buhler (4:58-63), individual help for children with problems should be considered to be worthwhile because not every child needs this type of elaborate study to be understood and to be handled adequately, and the children who benefit from such a study are not only the few with whom they are actually carried out. The others in the class profit from the problem child's improvement and from the increase of the teacher's general understanding of children's personalities. If the expense for this type of assistance is compared with the expense of institutions, then the expense and effort involved in such studies seem minimal in comparison and are of maximum benefit for the welfare of all.

Hildreth (11:14) also favors early help for children, suggesting four reasons for such help:

1. The child who learns early has a longer period in school during which he can make use of reading as a tool for learning.
2. Children's minds are most flexible and impressionable, and the mental and physical growth that underlies learning to read is taking place most rapidly.
3. During the years from about six to ten or eleven, children are especially responsive to drill phases of learning.
4. Unless reading skills are established early, the child may never succeed in learning them easily.

Eye-Voice Span

The eyes of a competent reader normally fixate several words ahead of the word spoken in oral reading. In either oral or silent reading, he perceives enough material to grasp a thought unit. "The classical term for the forward sweep of the eyes ahead of the point of interpretation is eye-voice-span," according to Hildreth (11:75).

Another term is "association expectancy" which Dr. E. B. Huey (11:75) described as the forward push in which the eyes pick up words ahead of their interpretation. He calls this the A-span. It is found in all situations requiring interpretation of a succession of related impressions rapidly without interruption or error. The following are examples of the use of the A-span: (1) listening to oral communication; the meaning is caught by listening ahead, and not by listening for, and interpreting each word as it comes along; (2) speaking; the thought of the speaker runs some distance ahead of his speech; (3) smooth sight reading in music; (4) driving by an experienced motorist.

Quartz (11:75) found a high correlation between reading rate and the width of the eye-voice span. Dr. Buswell (11:79) found that good readers had a wider eye-voice span than poor readers at all levels of achievement. Hildreth continues in part with the following observations:

1. An eye-voice span of considerable width is necessary for intelligent grasp of material read, and for reading orally with good expression.
2. The wide span saves time.
3. Skill in thinking meanings also influences the size of the span.
4. It is especially good for words spelled the same but with different meaning and pronunciation; interpreting word forms that have several different meanings; anticipating punctuation marks for oral reading.
5. Familiarity with most of the words, and a wide enough attention span are necessary for a wide eye-voice span.

Vocalization

The tendency toward inner speech while reading silently is called vocalization. If the reader, according to Spache (24:249-50) moves his lips, tongue, or larynx while reading, he tends to read silently at no more than his speech rate. He considers that it is a result of an over-emphasis upon oral reading and lack of training in silent reading skills.

McKim (9:147) feels that oral reading is an advantage to comprehension in reading. She states, "Some youngsters seem to need a little of the reinforcement of their own voices to help them understand what they read." Oral

reading does not necessarily slow the beginning reader, she points out. According to Gray and Reese (9:147), the reading rate for grades one and two does not differ much whether it is silent or oral.

Harris (8:11-12) also feels there is a place for vocalization in reading in the young child.

Since the spoken word is so closely tied to the meaning, at this stage the child can hardly 'think' of the meaning without going through the motions of saying the word, and hearing the word inwardly as if he were saying it out loud . . . Tiny changes in the muscles of the larynx and imagery of hearing the word as if spoken by an inner voice are likely to continue . . . Most people continue to read subvocally all their lives.

Third grade is the time to give help in inhibiting vocalization, although the change usually takes place normally without any special training as reading habits mature. Hildreth (11:307) gives two methods for helping them. (1) The indirect method: supply the child with plenty of easy reading; work on word recognition with "look and think" responses; reduce the time spent in oral reading. (2) The direct method: Say, "Read softly to yourself to get the meaning," and, "Watch me while I read to myself." Suggest that he can read faster and finish his story sooner if he keeps his lips closed instead of talking out loud when he reads.

Listening

Children in the schools visited by Anderson, et al (2:51), were spending more time listening than any other single activity. The children were expected to listen 57.5 per cent of all the classroom activity time. The authors define listening as the act of receiving oral language. This reception involves the recall or deductions of meanings for spoken word symbols, the comprehension of ideas represented by different combinations of these word symbols, and the ability to use the ideas presented to build understanding by adding to, modifying, or rejecting previous learning.

Plessas (20:223-26) discusses a study of listening comprehension which he called "auding." It is defined as "the gross process of listening to, recognizing, and interpreting spoken symbols." Reading skills such as word recognition, vocabulary, and comprehension were compared. His finding was that high auding ability at the eighth grade level is positively correlated with a variety of high reading abilities.

Heilman (9:45-50) discusses the importance of listening.

Listening is closely related to many facets of reading, such as auditory discrimination, expansion of concepts, developing of independent work habits, reading with expression, getting meaning from listening to others read, and the development of usage vocabulary.

Wachner (9:47) states,

It is just as important to provide experience-listening if we want learning to take place as it is to provide experience-reading.

Heilman (9:45-50) discusses the subject of listening at length, and supplies many activities which the teacher can use to strengthen children's listening skills in an area which he considers to be neglected in many school curriculums.

Harris (8:130) gives information on how to conduct a listening comprehension test that will give a rough estimate of a child's reading disability when the teacher has reason to doubt the validity of other tests.

Handwriting

"Handwriting is allied to athletic skills . . . namely, good muscular control, relaxed nerves, good eyesight, and excellent co-ordination between hand and eye," states Cole (11:201-2). These traits develop largely as a result of age and growth, but training will help. She asks that the teaching be based on the imitation of a good model; practice simple skills under classroom supervision; teach self-diagnosis and self-correction; then introduce intensive practice but without competition; permit no strain or pressure, wait for nature to take its course in the development of speed.

All perception studies show that the farther handwritten letter forms depart from the vertical, the less legible they become, according to Hildreth (11:156). Legibility is directly proportionate to the degree of similarity between machine printed type-face and handwriting style.

In her advice for left-handed children, Hildreth (11:172) asks that they be permitted to continue manuscript writing indefinitely. Their writing, she explains, is almost always more legible before they learn to write cursive than afterwards. As the left-handed children begin to change to cursive, though, watch the placement of the paper. Also, encourage lefties to learn to type. Their need for typewriters is greater than other children.

Spelling

Kottmeyer (14:170-73) explains the auditory-visual relationships in spelling, and their significance for reading success. He concludes, in part, that although the common "look and say" method of teaching word recognition in reading is useful, and that although it carries over into spelling when a child's writing needs are limited to relatively few words of simple patterns, no one can depend entirely upon this skill to serve his spelling needs. If children are taught in spelling to listen for the sound

elements in words, and the common visual representation which stand for those sounds, they develop a useful power beyond visual memory to guide their spelling. If they learn these auditory-visual relationships in spelling, where the need for precision is greater, their application in reading is a relatively simple reversal of the process. Word recognition skills can be taught more appropriately and effectively during spelling instruction than during reading activity.

He continues to say that the fact that all English words are not "phonetic" does not limit the usefulness of learning auditory-visual relationships in spelling words. The child is to look at the word with discrimination to see whether it deviates from a regular phonetic pattern or not. If teachers teach children effective word recognition skills beyond the level of the beginning and final consonant substitution technique, they are tooling them with the body of generalizations which are indispensable to the discriminating scrutiny which is the basis of spelling power. When the child learns to analyze words he needs to spell, he strengthens and refines his word perception skills for reading.

Art Work

Observing the child as he paints, colors, draws, and participates in various art experiences may help the

observant teacher learn something more about the child, this writer believes. Motor co-ordination, confidence or lack of confidence, ideas and the expression of these ideas in a language situation, experience with media, dislike for being "messy," and many other reactions can be noticed.

Woolf and Woolf (30:148-50), say that:

Although it is generally unsafe to lay down rules for interpreting children's art work, some characteristics appear to suggest certain tendencies. Some of the principles and practices described in connection with the House-Tree-Person and the Bender Visual Motor Gestalt tests apply to the interpretation of art work.

Torgerson and Adams (27:185) state that although psychologists (Goodenough and Harris, 1950) are agreed that children express their emotions and conflicts through art, they are not ready to present a list of principles which teachers can use with confidence in the interpretation of children's art work. They also say that the art work of all children is not equally revealing.

A series of paintings will reveal a child's characteristic style, colors most frequently used, recurring content, maturity in representation, characteristic distortions or omissions in the human figure, attempts to portray motion, and activity and the like.

II. LITERATURE ON CAUSES OF READING DISABILITY

There has been much research work done in the areas of reading disability. This writer found it difficult to generalize because individual studies varied in different

factors and were not comparable on some points. The reason may be, according to Heilman (9:376) that:

There is still the tendency to advance hypotheses which in the final analysis may be over-simplifications in that they neglect to take into consideration the interaction of various factors.

He does believe that in a majority of reading problems the trouble cannot be traced to only one factor. Although a single factor could cause trouble in learning to read, it is unlikely that it alone would operate for any length of time. Unresolved problems seem to hasten the growth of other problems.

Heilman (9:376,380) goes on to say in part that the best informed opinion today seems to be that reading behavior is a part of the total development of one. The reading process and the reader interact at all times. Both conscious and unconscious motivations are involved in reading difficulties. Factors that may influence reading disability may be visual maladjustments, neurological impairment, speech and hearing difficulties, health, intelligence, emotional and personality problems, and environment and society.

Visual Maladjustments

Refractive errors. Hyperopia (farsightedness), myopia (nearsightedness), and astigmatism are discussed.

Kottmeyer (14:57) explains that hyperopia is present when the eyeball is not round, the horizontal diameter being

shorter than the vertical diameter, so the retina is too close to the lens, and the image is distorted. People can see clearly and comfortable so long as the objects at which they look are roughly twenty or more feet from their eyes. He also says, in part, that it is generally believed that most children, from the time of birth until they are about nine years old, have such misshapen eyeballs. Cole (22:15) reports that among all children of school age, about sixty per cent were farsighted. Robinson (22:17) states,

From the data presented in these reports it would appear that there was a high incidence of hyperopia among reading disability cases . . . indication from at least one report that improvement in reading resulted from the correction of hyperopia by lenses.

Nearsightedness, or myopia, is caused, Kottmeyer (14:60) explains, by an eyeball which has a horizontal diameter longer than the vertical diameter. Images of distant objects cannot be focused clearly on the myope's retina because it is too far from the lens. Myopia can be detected by the teacher more readily than hyperopia, although myopes are seldom penalized by headaches. Myopia is often rapidly progressive and unless the condition is arrested with lenses, the person may become seriously handicapped.

The third type of refractive error in vision is astigmatism. Defects in the curvature of the cornea or lens cause distortion in the affected meridians. Robinson (22:19) in her summary of studies of astigmatism (ametropia) states

the following observations:

It would appear from . . . that astigmatism is not closely associated with poor reading. In some instances it may even be associated with better than average reading. However, Betts and Eames believed that it might be a serious handicap, in individual cases, especially when present in higher degrees.

Binocular co-ordination. Binocular co-ordination is concerned with fixation, fusion, and stereopsis in vision. Also concerned is muscular imbalance, the phorias. Kottmeyer (14:63) explains that the "imbalance" has reference to the exterior eye muscles. In reading, the muscles attached to the eyeballs must pull both eyes inward. When the muscles of an eye cannot hold this convergence, they relax and give way. One eye may continue to receive reflected light rays from the printed material while the other eye may be receiving rays from other objects. This causes a visual blur and the reading is interrupted.

Kottmeyer (14:64) explains fixation in this way:

When such an image of a printed word, or words, appear on the retina, the 'message' goes through the optic nerve to the brain . . . The exterior muscles of the eyes now shift the eyeballs slightly to the right and the next word or words appear on the retinas. This 'jumping' and momentary pausing of the eyes continue until the end of the printed line is reached . . . The pauses are known as fixations.

Parkins (22:23) estimates that:

. . . fixation ability, which proved to be the all-important visual skill, being responsible, if defective, for handicapping the student over fifty per cent in attaining academic knowledge.

Robinson (22:23) describes fusion:

When the binocular co-ordination of the eyes is precise and accurate, there is a 'merging' in the brain centers of the neural impulses coming from the stimulation of both retinas in such a way that, although an image is recorded on each retina, we are aware of only one object, which is called 'fusion.'

Robinson (22:24) observes that the evidence in this area is confusing, but it indicates that defective fusion may be associated with reading failure and should be studied in each case.

Betts (22:24) defines stereopsis, or depth perception, as:

. . . another result of precise binocular co-ordination . . . brought about by . . . the . . . unlikeness of the image received by each eye viewing the object from different angles.

Here again, Robinson notes that the evidence is very conflicting.

Visual fields. Eames (22:25) explains that the fovea, which is the area of most distinct vision, is capable of reading about three-tenths inch of line or column at reading distance. Since many fixations take in more than this length, he concluded that the extra-foveal area was also utilized. Thus, any limitations in the visual fields would limit fixation span. Spache (22:26) summarized the results of these studies when he said,

Collectively the evidence indicates that limitations in the visual field may influence reading and spelling by narrowing the span of visual apprehension.

Robinson (22:25) again concludes that more evidence is needed.

Blind spots. Blind spots may be defined as small, regular-shaped areas of the retina which are insensitive to stimulation by light. Brombach (22:26) charted the size and location of blind spots in poor readers and reported some cases of relationship between enlarged blind spots and poor reading. Robinson (22:26) concludes that blind spots should be investigated further in careful visual examinations of poor readers.

Aniseikonia. According to the Psych-educational Clinic at Harvard University (22:27-28), aniseikonia was said to be present when:

. . . ocular images are unequal either in size or shape, so that during binocular vision conflicting excitations arrive at the visual centers in the occipital cortex and present difficulties in the ability of the individual to fuse the incongruent images aroused.

They found that sixty per cent of the cases of aniseikonia examined reported headaches, car-sickness, train-sickness, or seasickness, or difficulty in reading, or combinations of these. Robinson (22:27-28) states:

The evidence available justifies the conclusion that aniseikonia, especially over one per cent, should be considered in seriously deficient readers, although most clinics are not equipped to give tests for it.

The problem of vision as related to reading disability seems to be controversial. Some of the conclusions reached by Robinson (22:29-30) in her study of the work done by many researchers (Spache, Fendrick, Betts, Eames, Monroe, and others) led her to the following conclusions in part:

1. Research workers do not agree as to the amount of importance, etiologically, to attach to visual difficulties.
2. The reports, many of them conflicting, are often based on individuals varying in ages from seven to twenty-one years and in reading achievement from Grade I to college level.
3. Among the visual difficulties most frequently linked with reading inability and apparently in need of more careful investigation are hyperopia, hyperopic astigmatism, binocular inco-ordination, visual fields, and aniseikonia if younger children are being studied.
4. Many of the studies of visual difficulties are not made by refractionists. Co-operative research between refractionists and specialists in reading diagnosis is needed.

Concerning visual results, Eames stated (22:30),

Every finding must be weighed in relation to the child as a whole; his physical and mental make-up, his health, state of nutrition, habits of life, and the demands made on him by the life he is required to lead.

According to Ismus, Rothnew, and Bear (22:30),

Since ocular defects can be readily measured and corrected, it is advisable to look for these conditions before attempting long . . . costly remedial measures.

Neurological Basis

Kottmeyer explained laterality in part (14:20-21):

Declining attention is being given to aspects of the neurological theory of reading disability popularized about thirty years ago by Dr. Samuel T. Orton with the terms cerebral dominance, handedness, eye-hand dominance, and reversals. Most people are right-handed and right-eyed. Some are left-handed and left-eyed. Still others have mixed dominance--right-handed and left-eyed, or left-handed and right-eyed. Among a thousand of our clinic cases, it was found that about thirty-eight per cent showed mixed dominance and five per cent had preferred left hands and left eyes--figures which may be expected in a random group. We have never been able to find any substantiating evidence for these theories.

Robinson (22:46-47) reviewed much research in her book on dominance. It is very contradictory. Spache (22:46) stated that it was not true that the eye indicated as preferred in monocular tests was always the eye preferred in a binocular situation. Twitmyer and Nathanson (22:47) agreed:

. . . that there is an indication that a consistent dominance does not exist and that eye, ear, and body dominance does not necessarily follow to establish a theory of complete cortical dominance.

Traxler (22:47) considered a number of studies and reached the conclusion that:

. . . although some persons hold very definite opinions on the subject (referring to relationship between dominance and reading), the sum total of the research literature to date does not warrant these opinions.

In summary, Robinson (22:47) concludes that although various theories of dominance and preference have been propounded to explain reading disability, none of them have been proved. Since there is no agreement, it appears that dominance can be recognized only as one of several possible causes.

Speech and Hearing

Harris (8:27) observes that "Children whose speech development is retarded are likely to be slow also in learning to read."

Wepman (29:325-33) discusses the relatedness of speech and hearing. Listed are seven generalizations his clinicians and he have made about auditory discrimination:

1. The more alike the phonemes, the more they are misinterpreted.
2. Individuals differ in their ability to discriminate sounds.

3. The ability to discriminate sounds matures as late as the end of the eighth year.
4. There is a strong positive relation between slow development of auditory discrimination and inaccurate pronunciation.
5. There is a positive relation between poor auditory discrimination and reading.
6. Poor auditory discrimination often affects only reading or speaking.
7. There is little relation between the development of auditory discrimination and intelligence as measured by most tests.

He also pointed out that it is essential to have the ability to retain individual sounds in the mind in order to serve as models for later speech and as part of the phonic act necessary for reading.

Robinson (22:54-55) states,

All the studies of poor readers . . . have considered adequate vocabulary important. Gates, Betts, Monroe, Witty and Kopel, Durrell, and Dolch likewise agreed as to its importance.

Adam's summary of this relationship . . . 'Many children are plunged into reading before they have developed vocabularies to express their own ideas clearly, to say nothing of their lack of ability to understand the content to be read.'

Monroe (22:55) included tests of articulation in her reading-readiness battery because:

Speech defects occur more frequently among poor readers than among good readers. Regarding reading and speech as language related skills, ability in one might possibly be predicated by the others.

Monroe believed that inaccurate articulation might confuse the child as to which sounds were meant to be associated with certain printed symbols.

Bennett (22:55) reported that one factor which seemed prominent in relation to reading failure was a history of the child's having had a speech defect, although there was no evidence of the defect at the time of examination. Nineteen out of fifty children reported such a history.

Van Riper (28:124-25) discusses the two major types of hearing losses. The conductive hearing loss is caused by some defect in the outer or middle ear. The lower and middle frequency tones are usually heard as being more muffled or fainter than they should be. Children with conductive loss usually learn to speak, though a little retardation may occur. They often show many severe articulation errors of substitution and omission. The other type of hearing loss is the perceptive. It may be due to an injured or malfunctioning cochlea in the inner ear, a damaged acoustic nerve, or injury to the brain. Of the two, the latter is the more serious. It introduces distortion as well as muffling of the sound. The hearing loss is not equal for different frequencies of sound. Most children with perceptive loss

have a harder time hearing the high-pitched sounds than they do those lower in pitch. Sounds such as s, th, f, ch, and t are some of the high frequency sounds and would be faint or unheard. Yet the vowels and the m, n, and a few other consonants would be loud enough. A person with a high frequency loss can never hear normal speech as it really is. These children need special professional help in auditory training, in lip reading, in identifying sounds by their postures and movements, and in phonetic recognition.

Kodman (13:297-99) designed an evaluation of the influence of hearing loss upon the educational achievement in normal hearing school environment. The results seem to indicate that hearing-impaired children in the regular classroom may be educationally retarded on the average from 1.0 to 2.24 years.

It was the opinion of the author that the gap between edu-retardation and the presumed potential of these children was due to apathy and the failure to realistically assess the needs of the child Hearing loss has concomitant medical, educational, social, and psychological implications . . . the educational placement and achievement results reported here demonstrate the possible importance of many unmet needs of the hard-of-hearing child

Young and McConnell (32:368-70) state the following, in part: There are two million hard-of-hearing children in the United States. A careful review of the literature revealed three widely held conclusions. (1) Hearing-impaired children have essentially normal intelligence

except for language ability when compared with children who can hear. (2) The deaf and hard-of-hearing are usually retarded in school from two to four years for the deaf, and two to two and one-half for the hard-of-hearing children. (3) Whether or not hard-of-hearing children are significantly handicapped verbally has been less clearly established by research methods.

Health

Kottmeyer (14:17) states that physical condition affects school attendance, and since it may be presumed that healthy pupils learn more readily than those who are ailing, it is sensible to try to discover and remove these handicaps. "The few glandular dysfunction and brain damage cases we have had have not responded well to instruction."

Harris (8:40, 318) says that the teacher is often better able to notice and interpret the signs of a physical problem than parents are. When there is a physical problem, the teacher should see that the parents are informed of any recommendations that the school nurse or physician has made. On such issues as excessively late bedtime or a very unbalanced diet, teachers have no authority. The best that they can usually do is to explain to the parent the relationship that they see between the particular problem and the child's performance in school. Endocrine problems and the neurological defects are sometimes very important. Lack of energy

may be present because of a chronic debilitating condition like asthma, malnutrition, or heart disease.

Intelligence

"It is not at all uncommon for bright pupils to develop reading disability," states Kottmeyer (14:77). He continues in part, conversely, that children in the high seventy, eighty, and ninety intelligence quotient ranges can learn to read surprisingly well. These slower-learning pupils can master word perception skills and can often learn to read easy material faster than bright younger children, especially when it is within their fields of interest. Their rate of progress slows down when they begin to deal with word-meaning problems and with unfamiliar concepts. A remedial pupil should have a mental age of at least six and a half to seven years. Pupils with intelligence quotients below seventy-five or eighty should be instructed in classes for the mentally retarded.

Robinson (22:66-67) says that the exact relationship between intelligence and reading was expressed by most writers as follows: (1) Inadequate intelligence appeared to cause inability to learn in all school subjects. (2) In children who had specific reading disabilities, intelligence seemed to be distributed essentially as it is in the general population. Severely retarded readers may be found with low, average, and superior intelligence.

Witty and Kopel (22:67) concluded that most poor readers have sufficient mental ability to read satisfactorily if appropriate and attainable goals are set up and if there is proper motivation.

Emotional and Personality Problems

Kottmeyer (14:21) states:

It has always been fairly obvious that when children who cannot use books profitably are required, day after day, to attempt textbook learning they will be driven to some form of rebellion . . . we have dealt with the pupils as if they had no (emotional) problems. Many of these clinic pupils have had school records of aggression, withdrawal, and other manifestations of maladjustment, but there has been a consistent tendency among them to adjust themselves after they have mastered basic reading skills. We suspect that a skilled, sympathetic teacher . . . is a basic element in any therapy. . . in only about six per cent of our cases have we been sure that emotional disturbance was a significant factor in the original cause of failure to learn.

Robinson (22:81-87) also finds that opinions of authorities in the field and the results of a few experimental studies are agreed that emotional and personality problems might be a cause of reading failure. The severe maladjustments of the neurotic child are most evident. The minor adjustments which the child must make when he enters school are so many he may not be prepared to devote himself to reading. He may be hampered by emotional immaturity, lack of confidence and security, unpleasant or indifferent associations with words, or excessive timidity. Robinson

continues in part: There is no doubt that reading failure had led to frustration, discouragement, disinterest, inattention, and maladjustment. Children's reactions seemed to be of three general types: First, aggressive reactions, in which the child attacked the whole environment associated with reading; second, withdrawal, when the child sought for satisfaction outside the reading environment; and third, lack of emotional affectivity where the child appeared responsive, but evidenced no feeling tone to his response.

Witty and Kopel (22:87) reported that at least fifty per cent of their cases of subject-matter disabilities at the Northwestern Psychological-Educational Clinic had "fears and anxieties" serious enough to require therapeutic measures. They stressed

. . . success rather than failure, regular habits, home co-operation in the development of such character traits as initiative and self-direction, more effective social relationships, and a sense of security . . . Bad behavior, we find, is generally a reflection of school and home situations which are limited in opportunity for varied experience and which are saturated with tensions resulting from efforts to make all children equally amenable.

Hardwick summarizes in conclusion of this discussion (22:87):

. . . if the personality problem is basic to a reading failure, it must be treated before we can expect much gain in reading. However, if reading failure brings about emotional disturbances, the reading pressure must be alleviated before the emotional difficulty can be entirely cleared up.

Environmental and Social Factors

Robinson (22:93-101) explains in part that a great number of social factors have been studied in relation to reading failure; for example, education, physical health, emotional reactions of parents, language spoken at home, economic status, neighborhood conditions, and ordinal position in the family.

Stulken (22:93) thought that reading disabilities seem to be caused by environmental factors such as foreign language or dialect speaking at home, broken school history, poor economic status of the home, and poor teaching methods. In his study of boys, he found they had changed schools three or more times before coming to the school in which the study was made. He considered their homes inadequate, and found evidence of a lack of reading materials at home.

Monroe and Backus (22:94) found that illiteracy, foreign language in the home, and insufficient background were causes of reading failure. They believed that the attitudes and interests of parents were reflected by their children and that the children, in turn, were more easily motivated when their parents enjoyed reading.

Loutit (22:95) suggests, however, that:

There has apparently been no demonstration that the socio-economic condition of the home has any relation to reading except as it may have a relationship to general ability. However, in the case of homes of the lower socio-economic groups one might expect a lack of stimulation toward reading or even antagonism toward it.

Monroe and Backus (22:101) state:

We may conclude that in most cases one factor alone is not sufficient to inhibit the act of reading, if compensating abilities are present, and if the child's reaction to the difficulty is a favorable one.

Robinson suggests that perhaps ". . . The school itself might be a very important cause of reading failure" (22:101). The administrative policies, materials, size of classes, training and personality of teachers, must all be taken into consideration and, if possible, evaluated as causes of severe retardation in reading.

However, Heilman (9:322) considers that methodology alone is not responsible for producing the host of impaired readers and non-readers. He says the human organism is extremely flexible and it is a proven fact that children can and do learn to read under the most adverse methodological procedures, provided that they are physically and emotionally ready to read.

In conclusion, the statement by Monroe and Backus (22:101) will be cited in part: Reading disabilities are usually the result of several contributing factors rather than one isolated cause. We may conclude that in most cases one factor alone is not sufficient to inhibit the act of reading, if compensating abilities are present, and if the child's reaction to the difficulty is a favorable one.

III. LITERATURE ON THE REMEDIATION OF READING DISABILITY

Remediation of reading disability is concerned with the child, the teacher, and the parents. The reading disability cases can be reduced through early identification, diagnosis, and help at the primary level. There will be a need for concentrated study made of the factors responsible for the difficulties. Counseling for the child, parents, and classroom teacher should be provided. Special remedial techniques will be used by the classroom and remedial teachers. A reduction of unwise pressures upon the child should come about through the increased understanding of the problem by the parents and the teacher.

Diagnosis of Reading Retardation

Taylor states (26:401):

If diagnosis is to serve its purpose, it must make a difference in the remedial procedures that follow it. Both methods and materials should be chosen to correct the weaknesses discovered. Even after a reasonable method of remedial instruction has been chosen, continuous diagnosis may suggest alterations to produce steady progress in correcting the difficulty. Unless we are willing to relate remedial practices to the problem they are to remedy . . . to avoid employing more of that same method under which pupils have failed, our diagnosis will have limited value.

Background information. This will consist of the child's school record, home information record, perhaps an

interest inventory, and possibly records of emotional disturbance.

The child's school record from other schools and rooms is helpful. In reviewing the record of attendance and failures, it may show poor attendance, repeated failures, and other indications that he had little chance for success. The age of school entrance in comparison with the I.Q. may show that the child's mental age was too low during initial instruction to have a chance to learn from books. The reading test scores will help one to guess at the kind of classroom experiences the child may have had. The school record may help the remedial teacher to reconstruct the child's experience with school. This advice is given by Kottmeyer (14:32-40), in part, and continues.

It is highly desirable to have the parent come for an interview and provide the information needed on the Home Information Record. The information is important, but it is more important for the teacher to have an opportunity to see what the parent's attitudes are concerning the school and the child's disability. If it appears that the parent's attitude will interfere with the child's progress, the remedial teacher will do well to speak plainly and honestly and do what can be done to reduce interference.

The Interest Inventory is an effective way for the teacher to become quickly acquainted with the pupil, and it

also will give the teacher some useful information to use in planning the program. Interest, or motivation, is very important in the remedial reading program.

Signs of emotional disturbance may reveal symptoms during diagnosis, or some indication may appear in the home and school reports. If psychological or psychiatric service is available, referral should be made. Personality tests, such as the California Personality Test, may be used, although all such test results should be interpreted with caution.

Physical and sensory tests. These include physical examinations, hearing deficiency tests, speech examinations, and tests for dominance.

Kottmeyer (14:41-48) explains in part the above tests. Because some fifty per cent of clinic cases show one or more physical deficiencies which should receive medical attention, a thorough physical examination ought to be made for pupils who have trouble learning to read.

Gross hearing deficiency will probably not go undetected long by observant teachers, but a careful inquiry into handicapping factors will include a determination of the range and acuity of hearing in a soundproof room with a pitch-range or wide-tone audiometer. Children who show a loss of twenty or more decibels in two or more tones in either ear should be

examined by an otologist. The otologist will try to determine the cause of the loss, and determine whether or not treatment will restore hearing, or try to prevent progressive development of the loss.

The teacher can make speech examinations by the use of one of the many charts, or by counting, etc., to note which sounds are omitted or distorted. Pronunciation of these words requires the child to produce various sounds in the initial, medial, and final positions. If there is a speech therapist available, referral can be made. The phonetic training in the remedial program will also be helpful. The Wepman Auditory Discrimination Test is also useful.

Interest in dominance as a factor of reading disability has subsided in recent years. There has been no general agreement about what to do about left-handed, left-eyed, or mixed dominance in pupils, although the use of a kinesthetic method advocated by Grace M. Fernald has been proposed as one remedy for reversals. Kottmeyer's experience has shown that the use of single-letter phonics, which habituates a left-to-right sequence, inhibits reversal tendencies. A substantial percentage of first-grade pupils reverse, but the tendency gradually disappears for most of them. Robinson discusses dominance research findings extensively in her book.

Vision. Kottmeyer (14:49-76) discusses vision. The remedial teacher should be familiar with common visual defects, understand the physiology of the eye, and should be able to administer, score, and interpret one or more of the visual screening tests. She needs to understand the reading process, and the problems produced by defects in vision. An accurate analysis of visual defects should be made by an ophthalmologist. Some vision screening devices include the Snellen chart. Farsighted children will read it without difficulty. Its primary usefulness is in detecting the nearsighted children. A more elaborate screening device is the Keystone Visual-Survey instrument.

Standardized tests. Kottmeyer (14:77-90) includes tests of intelligence, oral reading, silent reading, and spelling in this group.

Group intelligence tests which require the child to read the test items are of little use with remedial pupils. Considered to be very good as an accurate measure of learning capacity are the Revised Stanford-Binet Scales by Lewis M. Terman and Maud A. Merrill. Some teachers feel that the Binet puts a premium upon the language factor and that the scores of retarded readers are mildly penalized thereby. The Wechsler Intelligence Scale for Children is another highly satisfactory performance scale. Two aspects of

intelligence are measured, with separate scores on the Performance Scale and the Verbal Scale. The Verbal Scale is a reliable measure of the ability to learn from books. There are often considerable differences in the scores on the two scales by a pupil, Kottmeyer states (14:77-80).

Kottmeyer (14:81-84) feels that the oral reading test is one of the best means of diagnosing a child's word perception skills. The most important result is the kind of errors the child makes when he tries unfamiliar words. The oral reading test helps determine the selection of the silent reading test and also gives the examiner an opportunity to note and record speech defects. Oral reading tests usually consist of a series of short paragraphs of increasing difficulty. As the pupil continues to read more difficult material, there is an opportunity to observe his methods of word attack and his habitual errors. The oral reading test is invaluable in revealing the pattern of habitual errors and in charting specific teaching to be done. It may be convenient to record the initial oral reading test on a disc recorder. Examples of tests that have been satisfactory are the Standardized Oral Reading Paragraphs by William S. Gray, and the Gilmore Oral Reading Test. Other tests are also available, and Heilman and others include instructions for teacher-made informal tests of value in their books on reading.

Kottmeyer (14:84-87) goes on to say that there are two kinds of silent reading tests, the diagnostic and the power. The diagnostic silent reading test is designed to give information about a number of reading skills, such as rate, vocabulary, dictionary usage, use of reference materials, ability to recall detail, etc. The power test is primarily useful to show the difficulty level of the material which the child can read comfortably. Since remedial readers have mastered relatively few reading skills, some of the more diagnostic reading tests are of little use with them. The oral reading test should be given before the silent reading test is chosen. The results of the oral test will indicate which silent reading test will be the best to use with each pupil. Example of a servicable test is the Gates Tests, since they cover the necessary range of skill usually dealt with in remedial reading. The test should have enough range so that the pupil cannot score nearly all items correctly, or that he can score only a few items.

Kottmeyer (14:87-90) states, in part, that standardized spelling tests are not particularly useful with remedial students because they are usually a part of a battery of achievement tests. He devised a diagnostic spelling test which would give a crude measure of "grade" placement and which would yield some diagnostic information about phonetic power in spelling.

Disability analysis. A disability analysis is designed to reveal needs in word perception skills. A class in remedial reading often supplies teachers with different informal tests of this type, and books on reading sometimes contain material that the teacher can adapt for her own use. Kottmeyer (14:91-97) explains the different skills and how they can be tested. They are as follows:

1. Sight vocabulary can be measured by using Dolch's Basic Sight Word Test.
2. The use of context clues may be found by constructing sentences with words missing.
3. The names of the letters of the alphabet, capital and small--can the child read all of them?
4. Can the child make the consonant sounds and does he know them?
5. The substitution of beginning consonant sounds that the child can make.
6. Can the child hear the short vowel sounds?
7. Does he know the two long-vowel patterns, or when a vowel is long?
8. Does he know the common vowel digraphs?
9. Does he know sound blending?
10. Does he make reversals?

Other skills to test would be common prefixes and common suffixes as units, compound words as units, and the division of words into syllables.

The Teacher and Remediation of Reading Disabilities

Kress (15:540-44) states the following:

In the remedial program the teacher must give undivided, individual attention to the child, and she must enrich each learning situation so that the child's associative difficulties are overcome. To do this, she must open additional sensory gateways to learning . . . Kinaesthetic and tactile methods are employed. In each word learning activity, the remedial teacher utilizes several sensory modalities to produce strong neural connections in all major language-association areas of the cortex. The tactile or tracing method requires concentration and enhances retention.

Anderson (1:255) is concerned that the remedial teacher be well trained.

The teacher who is master of his area can read signs in a child's behavior, signs that tell him of the child's misunderstanding. The same behavior reveals little to the less competent teacher. He rarely sees that the root of a learning difficulty may lie in children's difficulty in understanding a concept. He is more likely to attribute children's difficulties to short attention span, to laziness, to poor study habits, or emotional disturbance--all factors that are comfortably distant from the teacher.

Spache (24:298) comments upon the many kinds of remedial programs. "There must be some common element in these completely contradictory remedial programs which lead poor readers to improvement." He continues,

. . . in our opinion, the reason for the moderate success that almost any remedial approach achieves lies in the type of inter-personal relationship established between the pupil and the remedial teacher. As Helen M. Robinson says, ' . . . maximum success in correcting personal and reading problems results when a sympathetic teacher accepts the pupil as an individual, respects his integrity, provides reading material with which he can be successful, de-emphasizes errors, and gives appropriate recognition to success and learning.'

. . . Remedial reading, then, may be considered essentially a counseling or guidance relationship between the remedial worker and the retarded reader. It is true that the program is undertaken with the ostensible purpose of improving poor reading skills . . . remedial methods and materials become simply a means to the end of helping the poor reader achieve his full potential in his world.

Spache summarizes with this statement:

. . . The only logical explanation for the success of many remedial programs lies in their implicit recognition of the emotional and motivational components of reading retardation.

CHAPTER III

CASE STUDIES, METHODS, AND MATERIALS

There are two case studies made for each of the three boys taught in the remedial program. One study is a record of the proceedings in and related to the work in the remedial classroom. The other is a study of the background information about each boy. The latter is included in Appendix A, but the information contained therein will be used as needed.

The methods used in teaching the boys were learned in a remedial reading class, in regular classes related to reading, from the book by Kottmeyer (14), and from other sources.

Materials employed were usually chosen on the basis of availability, those the writer had had experience with, and those recommended by remedial-reading authorities. Some were tried on an experimental basis.

I. CASE STUDIES

Case 1

Week of September 29-October 2. Phonics check-list given. He had more difficulty forming single consonants than hearing them. Trouble with two-letter consonant blends. Three-letter consonant blends not attempted when too difficult. Dividing words into syllables not attempted. Short

vowel sounds known when prolonged and repeated by the teacher.

Took the Wepman Auditory Discrimination Test. Could not distinguish the th and y sounds.

The Kottmeyer Diagnostic Spelling Test was given. Missed all but five words, but, man, like, good, and happy. He wrote met for not, going for get, sat for sit, but for boat, ten for train, tom for time, fund for found, duin for down, etc. This test gave him "below second grade" placement.

The teacher conferenced with the home-room teacher, Mrs. E. She requested that Case 1 continue with manuscript writing. He has reversal confusion, d-b, and au-ua. Mrs. E. said he was "completely lost" in the third grade classroom of thirty children. Mrs. E. had secured a different reader, Fun With Our Friends, and a companion workbook for his use. The remedial teacher planned to continue with this for directed reading lessons. Mrs. E. requested that he be helped with a science report, in order to give him success before the class. The remedial teacher planned to relate her help with him to his classroom activities as much as possible.

Lessons this week consisted of writing short a sounds in words with single consonants, working on stories in the basic reader, and reviewing basic reader vocabulary.

Week of October 5-9. Worked on single consonants and short vowels. Used Dolch's 95 Basic Nouns for flash-card drill. Read directed lessons in the basic reader, and reviewed the necessary vocabulary.

The Gates Advance Primary Reading Test was given. The first eleven selections were correct; then he had trouble, and finished rapidly. It appeared he was guessing on the last pages. The results were: Reading Age 7.7; Reading Grade 2.4.

Worked on the "fox" report for Science. I re-read orally the two selections and we decided which categories the information would fit. He wrote in the words with help. We did not finish it.

Week of October 12-15. Spent much time on short vowels. Read in the basic reader in directed lessons. He needed help re-printing a poem he was to have for the Open House display. Difficulty with tall and short letters, spacing between words, and placing letters on the line.

The "fox" report for Science is very important to him. We spent some more time on it. We often run over time, but he is very pleased to stay, and likes the remedial situation.

Week of October 19-23. Has trouble distinguishing vowel sounds in the written drill. No trouble with single

letter consonants. Read in the basic reader and spent some time on the related workbook skills.

Worked on the final part of the "fox" report. We worked on it so he knew the vocabulary. The remedial teacher went to his classroom and heard him give the presentation. He had little trouble, the children were attentive, and he was assured.

Week of October 26-30. Written drill, with some work on nonsense syllables using short vowels. Considerable time spent on directed reading lessons, and the accompanying workbook. Checked the vocabulary of Fun With Our Friends, and he knows most of it. He started the phonics booklet, Happy Times With Sounds, Book II, for interest and review.

Week of November 2-6. Worked again with short e and a sounds, then the i sounds, some initial and final two-letter consonant blends. Tried "word family" words for some initial consonant substitution. Continued with the basic reader and workbook in directed lessons. He is learning nicely.

Week of November 9-13. Continued with the phonics training. Read daily in a directed lesson in the basal reader.

Remainder of the school year. The remedial teacher gave up the remedial program and taught the third grade on

a regular basis. Case 1 was in the class and the teacher continued with the reader and workbook, later securing a second grade reader and workbook which he completed. She found time to work with him daily in a directed reading lesson, and provision was made for extra practice on vocabulary, the Dolch cards, etc. For his particular benefit, and for some others in the class, a considerable amount of time was spent in short periods on "listening tests" of various kinds to develop several kinds of skills. He did well on these, except where he needed to write a sentence as an answer. Thought problems in arithmetic were read to the class, and his success in computation carried over into this activity. He was delighted when a short writing, spelling, and phonics class was set up in the spring to help some of the children, and he was more successful, in the beginning, than they were in it. He could read fairly well some of the third grade materials, particularly the health book. The teacher felt he was doing far too much oral reading and next year she will make more effort towards the acquisition of silent reading skills.

Case 2

Week of September 29-October 2. Case 2 comes from the fourth grade. Phonics check-list was given. He had trouble with the two-letter blends. He knew the first

letter, but not the second. He could not do the three-letter blends, the consonants that make a new sound together, and dividing words into syllables.

The Wepman Auditory Discrimination Test was given and he had no trouble with it.

The Kottmeyer Diagnostic Spelling Test results gave him a grade placement of "below second grade." He wrote gete for get, site for sit, bot for boat, tran for train, tine for time, fon for found, done for down, son for soon, vere for very, happe for happy, kun for come, etc. He has a n-m confusion.

The program in Kottmeyer's book, using the key word pictures, was started. This child is left-handed, and slants the writing far to the right, but the position is good.

A group listening test was given. He missed most of the main idea, the sequence, and the purpose. He needs to work on the meaning and comprehension.

Started in the Reader's Digest Skill Builder, II, part I. It is very difficult. He has no word attack skills, and guesses. I read part of it, then had him read. I supplied vowel sounds and helped him work through the words. The exercises at the end of the story were an important part of the lesson, and it was often necessary to re-read. He was friendly and obviously enjoyed the lesson. He is tense, and anxious to please.

Week of October 5-9. Worked on the key word picture phonics daily. Introduced Dolch's Noun flash cards. He knew many of them, and missed some.

The Gates Advanced Primary Reading Tests were given. He missed the easy ones as well as the hard ones. Scores made were 2.8 grade, and 8.0 age, on Paragraph Reading, and the same on Word Recognition.

He still had much difficulty reading the story. He reads fast and guesses. He likes the stories very much.

Week of October 12-15. Phrase card drill introduced; also, two-letter blending started in the phonics lesson. Uses th for wh in some words. Has trouble with the w sound. Enjoys the word-writing and the phrase drill very much.

When he cannot say a word in the story, he says, "lemmese (let me see)" over and over again to himself, and pulls on his hair. I found that I must slow him and myself down to eliminate this pressure. He has many problems to unlearn, or inhibit, in his reading. He had trouble with the part on "opposites" but not the rhyming words. He is making progress, and his fourth-grade teacher is very pleased with the remedial program.

Week of October 19-23. He is successful with two-letter blends. His handwriting is improving.

In drawing the key word picture, he colors fast, with

sure strokes. He laughs and explains and enjoys it. Seems to have good co-ordination in this activity.

Read all of the story well; is uneven, but tried all words with very little error. Still has trouble with "opposites" in the exercises. Also had trouble with contractions, but did much better when this was repeated the next day.

Week of October 26-30. Good on the two-letter blends and short vowels in the phonics word.

Makes many, many mistakes in reading. The teacher said, "I want to test you on the Basic Sight Words." (Dolch's 200) He became panicky and said, "Lemme see," over and over again. We stopped and discussed what fright does. The lesson was then resumed and we went over the words again. He became more relaxed and missed 29 out of the 220. He reads well one day and not well the next. I mentioned to the school principal that his oral reading was sometimes similar to that in stuttering behavior.

Week of November 2-6. He is having much trouble with the new sound, tch. He repeats the words when bothered; still reads too fast; guesses rather than taking the time to figure it out; said was for has twice today. He is noticeably improving in comprehension.

Week of November 9-13. Worked with two-letter blends and sounds sh, ch, th, wh. Read in the Reader's Digest Skill Builder. Some absence this week.

Case No. 3

Week of September 29-October 2. The phonics checklist was given. This child cannot write the letters q and z. He is unable to do the second letter of a two-letter consonant blend. He can do some of the letters that make a new sound, such as ch, sh, wh, th. He could not divide words into syllables.

The Wepman Auditory Discrimination test was given. He cannot distinguish y and th initial position, th and y final position, f and th initial position, and f and th in the final one. The Kottmeyer Diagnostic Spelling Test was given. He scored eight correct, with a grade placement of "below second grade." He wrote gat for get, tan for train, tim for time, daen for down, etc.

He confuses d, p, and b in writing.

A group listening test was given. He did fairly well.

Case 3 has no word attack skills in oral reading. He does better on a second try. He was started on the Reader's Digest Skill Builder II, part I.

Week of October 5-9. Case 3 has trouble remembering short vowels this week. He is not consistent with this.

Reverses b and d in writing. The th is no trouble now.

Checked him with the Dolch's 95 Noun cards. He knew them well with no reversals.

He is not sure of p and t and questions these two sounds.

The Gates Primary Reading tests were given. Results were: Word Recognition, Reading Age 8.3, Reading Grade 3.1. He was successful with the first one-half of the test. Results for Paragraph Reading were: Reading Grade 3.2, and Reading Age 8.5.

Week of October 12-15. Checked him with the Dolch phrase cards. No trouble with these, even when flashed quickly.

Still has trouble with short vowel sounds, in the hearing, thinking, and writing of them. Toward the end of the week was much better.

He could find the root word in key words quite well.

In the oral reading, he is using some word attack skills, blending skills, and had only one error in one-half of the story. He does the exercises at the end of the stories well.

Case 3 enjoys the stickers which I supplied for reward. The children stick them on the covers of the folders that contain their written work. He said, "I'm thinking which sticker I'll choose." It was taken for granted that they would receive these at the end of the lesson each day. They enjoyed looking the stickers over and discussing them.

Week of October 19-23. He had trouble with t and d, confusing the two of them. We reviewed short vowels. He had trouble with a and e two out of four times, then no more.

He requested that we work on blends so he could see how successful he could be. I made two letter blend flashcards from the words we had been working with for this.

Oral reading was good this week, and all or almost all of the exercises were answered correctly, except for some of the contractions.

Week of October 26-30. We checked the 220 Dolch Basic Sight Words. Case 3 missed 12. Worked with blends this week, and the sounds like sh. There was no tension with this child.

His oral reading was poorer, but answered the questions correctly.

Week of November 2-6. We worked again on the sh, ch, th, wh, and tch sounds. He says f for the th sound part of the time. He has some trouble with these. He knows the short vowel sounds.

Reads well orally, although he had a bad cold all week.

Week of November 9-13. We worked again with the sh type sounds. Continued with the usual pattern of the lesson.

Conferenced with the mother of Case 3. She cannot understand why he had had trouble with the short vowel sounds. She said he knew them when she worked with him at home. She felt that he had been pushed too fast in school.

II. METHODS

The method of instruction employed by the remedial reading teacher will depend upon the needs of the child. Since the purpose of the remedial program is to return the child to normal classroom activity as soon as possible, economy of time and effort should be considered in the choice of methods and materials.

Patterson and Joyce (19) discuss methods for teaching a bi-lingual child that would be very helpful in working with any language-deficient child.

Moss (18) based her teaching of three non-reading third graders on the writing of their own stories. She then taught reading skills from this base.

The tracing, or kinesthetic, method is successful as proposed by Grace M. Fernald, author of Diagnostic and Remedial Work in the Basic Skills, 1943. She reported that children with extreme disability who had failed by other methods succeeded in learning words by tracing them.

It is this writer's experience that some children are happy working in the basic reader from the series their school is using, for the directed reading lesson. The advantage is that these children are practicing the vocabulary of the series which the children in the classroom are using. Other children have experienced so much failure with the regular school materials that they need materials from another source, which is exclusively for the remedial teaching situation.

The daily lesson plan which this writer used with the three boys was in three parts. The first part of the period was spent in introducing a new sound, or sounds. Key word pictures were drawn. As many sensory pathways as needed were employed. The child listened to the sound, thought how it sounded (try it in your mouth), said the word, wrote the word, and tried to read what he had written. Matching of sounds, prolonging of sounds, mouth and tongue

position, keys and clues for remembering, etc., were used as needed.

The second part of the lesson was devoted to drill. Games, devices of various kinds, flash-cards, etc., were used for repetition and to stabilize the necessary reading skills.

The third part of the lesson was the directed reading lesson in which the child put to use the various reading skills he was learning.

Kottmeyer (14:6-13) justifies his methods for teaching remedial reading with the following discussion in part. There is not justification for remedial reading activities if they are not controlled by methods essentially different from that of other reading instruction. A remedial reader is a retarded reader, and he must learn skills faster than he would in a regular classroom. The remedial reading teacher therefore needs to drive directly and rapidly for the development of the reading skills which are normally the outgrowth of a more leisurely paced classroom program. If we assent to the suggestion that pupils become remedial cases only after about three years of exposure to primary classroom teaching, we rarely need to deal with the reading-readiness problem. Most of them have enough oral language competence to learn to read by this age. There will be little profit in spending even more time in attempting to

develop sight vocabulary as the younger pupil acquires it. If he has spent three years looking at a small sight vocabulary in context and failed to learn it, there is little reason to suppose he will now.

We read words by recognizing them by their configuration, by inferring them from context, by phonetic helps, and by structural analysis. Remedial reading places emphasis upon phonics and structural analysis. These are presented much more rapidly than in the classroom, and are dependent upon drill to secure mastery.

Kottmeyer criticizes word family phonics. It is obvious that any system of phonics which deals with monosyllables must be supplemented by word structure generalizations if it is to be useful. The pupil is taught to use both the context and the substitution technique to unlock the word. The fact remains that the pupil's power to unlock unfamiliar words is still restricted to those words which are members of word families, and the research shows that the number of words in this category is surprisingly small. Beginning consonant substitution becomes useful only after a fairly substantial stock of sight words has been mastered. It becomes increasingly useful as the sight vocabulary grows. The poor reader with little power of visual imagery has great difficulty in acquiring sight vocabulary, or he would not be a poor reader. For him, the consonant

substitution method will have limited usefulness.

Kottmeyer continues with a discussion of the merits of single-letter phonics in part. Single-letter phonics require that the pupil become familiar with both consonant and vowel sounds immediately. The process begins with practice with phonetically regular monosyllables which have short vowel sounds. Consonant variations and long vowel sounds and vowel variations are introduced as rapidly as possible. Distortion can be completely inhibited by practice so that the pupil learns to "think" the sounds together.

In contrast with word-family phonics, there is no confusion when the word structure generalizations are taught, because the child does not look for the family units which are often crossed by syllabic divisions. This method is also more directly applicable in strengthening spelling skills. It can be taught faster and applied more quickly, and it is especially useful for the slow-learning pupil. The writer notes that this method also teaches the important left-to-right progression in reading.

Kottmeyer (14:116-46) discusses phonics and structural analysis in part. A careful scrutiny of common vocabulary shows that letter symbols and sounds have a consistently high relationship. The child who does not recognize words needs a crude sound blending tool to approximate the unfamiliar word so that he can combine his sound clues with the

context clues to help himself. The retarded reader, using easy reading material, almost always knows the word he cannot recognize. He is in trouble because he does not recognize which of the words he knows is represented by the visual symbol at which he is looking.

The rate at which the letter sounds are taught depends upon the pupil. The consonants should be introduced first. Each of these consonants should not be learned as an isolated sound but as the sound that starts--naming a key word. The pupil should learn to associate the letter with the key word instantly. The short sounds of the vowels can be taught together by means of key words, but it is less confusing to slow learners if one vowel is introduced at a time. When he begins to blend, he must not be permitted to pause between sounds. Learn these two rules for long vowels: (1) When two vowels are together in a word, he is to name the first vowel and skip the second. (2) When there is the vowel-consonant-final e pattern, skip the last vowel and say the name of the first. Next, work with letter pairs that represent the one sound, sh, ch, etc. In the work with structural analysis, start with (1) compound words, (2) common word endings, (3) dividing multisyllabic words, (4) prefixes and suffixes.

In his summary on phonics and structural analysis, Kottmeyer gives these suggestions for remedial teaching:

1. Build some sight vocabulary.
2. At the same time, work on sharpening auditory acuity.
3. Introduce consonant sounds by key-word pictures.
4. Teach sound-blending with isolated words, each short vowel being introduced in turn.
5. Then introduce the two long vowel patterns.
6. Spend much time in oral reading to give opportunities to apply sound blending skills in a natural reading situation.
7. Non-phonetic words are treated as sight words and told to the pupil.

While these are being taught, spelling, introduction of easier syllabication skills, silent reading, correction of bad reading habits, etc., should be carried on.

III. MATERIALS

Lists of materials that were used in this study will be found in Appendix B.

Heilman (9:385) states:

The basic criterion as to whether there is a (remedial) program is whether the teachers . . . have time to prepare lessons and materials.

He continues (9:402):

The problems of motivation, interest, attitudes, work habits, and attention span are more acute with the remedial reader.

Interest and motivation are important considerations in teaching remedial reading. The choice of lessons and materials must be made with these factors in mind at all times. Heilman (9:99), Moss (18), Patterson and Joyce (19), Hildreth (11:129) and others favor an experience-chart approach to remedial reading when interest is difficult to arouse. Other children are happy to use easy reading materials which are new to them.

Case 1 (third grade) started with a brand-new Grade One reader and workbook from a different series than our school was using. He requested and later used a Grade Two reader and workbook from the same series our school was using. The advantages were a continuation of the same vocabulary, same format, and continuity of skills maintained. The fact that he was using this book presented no problems and did have advantages.

Case 2 and Case 3 used the Reader's Digest Skill Builders II, Part I. They were very pleased with them and examined the set with the anticipation of reading them later on.

The Dolch materials (The 220 Basic Sight Words, Phrases, and Nouns) were used with all three boys in a variety of ways. The Phrase cards were used for eye-span recognition. Many other flash-cards were made by the teacher as the need arose. A felt-pen and a stack of tag-board slips

were kept near, and cards were made to fit the situation. As an example, the two-letter blends that were used in the hearing, saying, writing part of the lesson were later put on flash-cards and flashed quickly to demonstrate how a word is worked out and then becomes a sight word.

Harris (8:324) and others feel that the child should plan with the teacher and help set up goals. Harris recommends a visually effective chart. We used a folder for each boy in which he kept his written materials. Stickers and stars were placed by the child on the cover and on his work. We assumed he was doing his best, and the reward was always forthcoming and was anticipated with pleasure.

The writer agrees with Harris (8:326) that the real lessons be business-like. This is a child's real work, and it assumes dignity and prestige by treating it as such. However, word recognition and phonics practice, reviewing, and drill, can be made to seem like fun by various games. Some of these the teacher will have from remedial-reading classes, some can be found in books on reading, and some can be purchased.

There are also other devices that can be bought or made to give the child practice in the areas in which there is a need.

Phonics workbooks are usually used in a remedial reading program. Upon examination they are found by this writer

to contain many phonics skills on one page. Sight words are used to demonstrate a different phonics skill, and complex phonics skills may be mixed with easy ones. Some use word-family phonics with initial consonant substitution. They do have value in interest, practice, and other skills, but pages assigned should be done so with the limitations of the book in mind for remedial pupils.

There will be a need for standardized tests in the remedial program. The Gates Reading Tests and the Wepman Auditory Discrimination Tests were used in addition to the test results found in the cumulative folder for the children. Case 2 and Case 3 were apprehensive in a testing situation, so the teacher tried to make informal observation of their progress. Informal testing included Listening Comprehension tests.

Other materials used were various record blanks and dittoed informal check-lists of various kinds. A file folder was kept with samples of handwriting and other materials. The remedial teacher also needs a lesson plan book, manuals for remedial reading, vocabulary lists, spelling lists, lists of books of easy reading, high interest level.

Although a pleasant remedial-reading classroom would be desirable, a quiet corner with a table and chairs, a book case, and a place to store materials would suffice. The

school library in the basement was used during free periods for the remedial teaching done in this study.

CHAPTER IV

ANALYSIS OF THE DATA

I. CAUSES OF READING DISABILITY FOR THE CASES

Case Number One

This child could not read without error the simplest material at the beginning of the remedial work. He knew very little sight vocabulary, and his word attack skills were limited to some beginning and final consonant sounds. He had some reversals of sounds. His reading comprehension was considerably above his reading ability. His chronological age was 9.6, mental age 8.8, the Gates Reading Test age 7.7, and grade placement on the Gates test was 2.4. The IQ was 90.

He could not distinguish the th and v sounds. He spelled correctly only five words on the Kottmeyer Diagnostic Spelling test, with a grade placement of "below second grade." He knew some of the initial and final consonant sounds in spelling, but very few of the vowel sounds.

He could not write. The classroom teacher asked that he continue with manuscript. Alignment, letter form, and spaces between words were very poor.

Case 1 had moved and changed schools many times. The family has limited funds due to the size of the family and

non-employment of the father. The children are left in the care of the father or older children, and he was not always on time to school or to bed at a regular hour. He sometimes was not well enough to attend school, but was sent anyway. He had never participated in any school program in his school life until special efforts were made by the teacher for him to participate in the music program in the spring.

He was small, young-appearing, and friendly. He was not aggressive. He liked to stay after school and help the teacher and the school librarian.

The speech therapist and school psychologist both noted a lag in motor development.

Possible causes of reading retardation for Case 1 could be as follows: (1) Lowered mental performance (IQ 90) at least in the beginning years of reading instruction. (2) Mobility of the family with consequent interruptions in schooling. (3) Lack of language ability. (4) Lowered physical vitality. (5) Lack of word-attack skills and success in reading.

Case Number Two

This boy's word attack skills were limited to single consonant sounds, beginning and final position. He has some letter and word reversals. His listening comprehension was poor, as was his general comprehension. He knew some basic

sight vocabulary. He read fast and guessed at words and meanings.

On the Kottmeyer Diagnostic Spelling test he placed "below second grade." He is left-handed and slants the handwriting far to the right. Needed help in forming letters.

On the Gates Reading tests his grade placement was 2.8 and reading age 8.0. His chronological age was 9.2 and his IQ was 96. His school history showed low achievement in each grade. Case 2 manifested tension, anxiety, etc. Parent and school did not agree on grade placement of this child.

Possible causes of reading retardation for Case 2 could be as follows: (1) Lowered mental performance (IQ 96) and too difficult materials from beginning of school life. (2) Consistent low achievement in school with consequent lack of success. (3) Emotional conflicts interfering with school progress. (4) Lack of word attack skills and an easier reading program. (5) Lack of understanding between parent and school. (6) Slow development of language skills.

Case Number Three

This boy has no word attack or blending skills. He knows initial and final consonants, but not the vowel sounds. He has trouble hearing the differences in sounds. He has

some sight word vocabulary and uses context clues. His comprehension and reasoning ability are good.

On the Gates Reading tests his reading age was 8.4 and reading grade was 3.1. The IQ was 106 and the chronological age 9.5. The Kottmeyer Diagnostic Spelling test results were "below second grade." He had reversals in reading and writing. He missed four speech sounds on the Wepman Auditory Discrimination test. They were the same or similar to those which he had had trouble with in earlier speech.

He manifests anxiety, lacked interest in school, and was passively resistant to school activities. He had been failing in school for some time. There was evidence of lack of understanding on the part of the parent. There was also evidence that he lacked sufficient rest on a long term basis.

Possible causes of reading retardation for Case 3 are as follows: (1) Difficulty with language in all areas. (2) School program too difficult. (3) Experienced little or no success with subject matter. (4) No word attack skills learned. (5) Low vitality from lack of proper sleep. (6) Attitudes of parent and home.

II. PROGRESS MADE WITH CASES IN READING, WRITING, AND SPELLING

This study lacked terminal testing for comparisons between beginning and final achievement. Two of the cases

manifested anxiety in a formal testing situation due to a history of failures and concomitant problems that arose for them from these failures.

Case Number One

In the six-weeks' period he completed the mastery of single consonants, short vowels, two-letter blends, and the ch type sounds. He increased his sight vocabulary with the use of the Dolch materials. The vocabulary of the Grade One reader was mastered, and he could do the skills in the workbook that accompanied it. He made steady progress with these easy reading materials.

His classroom teacher was very pleased with his progress, and his mother told her that this was the first year he had had any interest in reading. He brought books home for himself and the family to read.

His writing and spelling were slow and laborious but improvement was evident.

Case Number Two

He mastered the short vowel sounds, single consonants, two-letter consonant blends, the ch type consonants, and some three-letter consonant blends. This boy asked for writing practice and was very pleased when he missed none of the words.

His oral reading and comprehension improved. One day he would be quite successful in reading and the next day it would be more difficult for him. The Dolch materials for different sight vocabulary skills were easy for him. He enjoyed taking the phrase cards and other cards and building sentences with them. There was a lack in a refinement in comprehension, however, in this activity and others.

His classroom teacher noticed improvement in all three skills in his classroom activities. She continued with a phonics workbook of her choosing the remainder of the year, but was disappointed with the results.

Case Number Three

This boy made progress in all areas. He had known parts of many skills, and the orderly presentation of these skills which were a part of the remedial program, was particularly helpful to him. The oral reading was done with little error, and the questions at the end of the short exercises were usually answered correctly. His interest and comprehension were good.

His writing was legible and carefully done. He needed to take enough time with each activity and could not be hurried. This may have been the most revealing information about this boy. The writing and speech problems seemed to clear up as the lessons progressed.

V. SUMMARY

The Analysis of the Data contains material to support the premise that considerable improvement was made in the writing, reading, and spelling skills of the three case studies. These improvements were a direct result of the diagnosis and remedial teaching done.

Indirect results of the study were less easily ascertained. The following results were evident in some degree, but not necessarily for all three cases:

1. Parental insight into childhood problems was gained, and extended to other children in the family.
2. There is a relationship between harmony of school and home and school achievement.
3. The school may need to alter its program when the adverse conditions appear uncorrectible.
4. When the remediation of conditions have been successful, the child cannot be returned to those conditions that produced, or contributed to, disability.
5. The burden on classroom teachers and classmates is lessened when child becomes effective in school.
6. The administration and staff gain insight by studying and observing the changes that take place when an unhappy, unsuccessful child gains success.

There are limitations to this study. It is short, of only six weeks' duration. All three cases needed more individual teaching. However, many remedial programs show progress with less time spent than this. There is a lack of terminal testing with standardized tests. With a longer period of time, and the added confidence it would produce, Cases Two and Three would have lost the fear of tests.

This writer believes that some of the effectiveness of the teaching program was lost when the children were returned to their classrooms without adequate follow-up in materials.

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APPENDIX A

APPENDIX A

BACKGROUND INFORMATION ON CASE STUDIES

Case Number One.

Home and Family. Case 1 is a nine-year-old boy, born May 13, 1955. He is fifth in a family of seven children. The brothers are ages fifteen, twelve, four, one, and nineteen. The sister is age sixteen. The family has moved many times. The mother works when she can, in the prune harvest and in the cannery in this locality, and the same type of work in other locations. The father does not work because of poor health.

Health. Case 1 had good school attendance. He came to school at times when he looked ill enough to had better stayed at home. He needed to be asked to wash and comb his hair. He complained of aches and pains, and seemed to lack judgment in falling from too-high places, and in getting bruised and scraped. His playground activities were not excessively careless, however. He has had chickenpox, measles, mumps, and convulsions in 1958 due to a severe head blow.

During the grade three term he gained one-half pound of weight to a weight of sixty-five pounds. In height he gained one inch, for a height of fifty-one inches. His vision was checked with the Snellen chart with a result of

20/20 vision in both eyes. Hearing was noted as "okay."
Behavior problems checked by the mother was "Shyness."

School achievement, promotion, and retention. There were no records prior to the entrance of Case 1 in Grade Two. For the 1963-64 term he attended school in Phoenix for a short time, then two schools in Washington State. He had been retained in Grade One. At the end of Grade Two he had been promoted to Grade Three with a cumulative D.

Case 1 was retained again in Grade Three at the end of the 1964-65 term. The reasons given were: (1) The family plans to move again next fall and he will have the same teacher until he moves. (2) The child is small and plays with the younger children. (3) He has just completed Grade Two reading materials. (4) He is grossly lacking in the Language skills necessary for Grade Four achievement.

The Wechsler Intelligence Scale for Children was administered by the school psychologist at the request of the teacher in December, 1964. Results were as follows: Age of child, nine years, seven months. The Verbal Scale MA, 8.11, IQ 93; Performance Scale, MA 8.9, IQ 91. Composite, MA 8.8, IQ 90. Psychologist's notes were as follows: "Generally low potential development coupled with the characteristic weaknesses which usually accompany this potential." "Lag in abstract motor application, audio-visual discrimination. Physiological motor lag of original origin."

Weaknesses: Recall, Recognition, Formulation, Expression responses.

Speech history. June 2, 1964, speech diagnosis made: "Delayed speech; multiple articulation disorder." Individual sounds worked on: s, z, and r. Stage of therapy completed: "Auditory stimulation, production." Comments: "This boy has an extremely hard time in articulation with connected speech. Finer muscle coordination development seems to be slightly retarded. Maturation will help a great deal in his case."

Communications. Teacher, Grade Two, November 4, 1963: "(Case 1) has gone to so many different schools that he is having a difficult time. He said that the school in Phonix considered putting him back in the second grade. I would recommend putting him back or letting him work on an easy level. He seems to be quick in learning if he could stay in one school for a longer period. He is a likeable boy."

Parent-teacher conference, November 2, 1963: ". . . Mother says that (Case 1) spells out words to her. She tells him what they are. She suggested that she would have (Case 1) get books to read to his little brothers."

"Parent speaks well in a choice of words to be admired. She appreciated how (Case 1) was treated."

Parent-teacher conference, March 31, 1965: "Mother felt (Case 1) was doing much better in reading because he could read comic books well . . . She felt that poor writing was a family trait. The two older boys were no more legible."

May, 1965. Telephone call to mother from the teacher. They discussed the retention of (Case 1). It had been discussed in the March parent-teacher conference. Mother agreed, but said she felt badly about it.

Case Number Two

Home and family. Case 2 is a boy born July 28, 1955, and is in the Fourth Grade. He is second in a family of four children. The sister is ten; the brothers are two and one years old. The father is a brick-layer and is a Cub-Scoutmaster for his boy's troop.

Health. The four years of school show a steady gain in height and weight. Vision (Snellen chart) and hearing are noted "okay". Case 2 has missed very little school. Diseases noted were the following: chickenpox, measles, and severe ear infections in 1962. Teacher noted in 1965, "tires easily, emotional disturbance, speech defect, nervousness, undue restlessness, excessive use of lavatory."

Father noted, "bedwetting, nightmares, nail biting," and the statement, "He doesn't explain fully to make himself understood."

Almost all Personal Growth items were checked "Need for Improvement" all four years. Case 2 was consistently "courteous and considerate."

School achievement, promotion, and retention. Kindergarten testing: The Pintner-Cunningham Primary Test was given April, 1961. The Chronological Age was 5.9, the MA 5.3, the IQ 92. The test booklet was marked "immaturity response, not to be recorded."

Grade One testing: Kuhlmann-Finch, MA 6.6, IQ 107. The Metropolitan Readiness Tests, total Readiness, Low Normal. The Basic Reading Tests, 10/30/61, Low Average; 2/2/62, Low; and 5/25/62, Low.

Grade Two testing: The Basic Reading Tests, 2/3/62, Very Low (all parts consistent); 5/19/63, Very Low (all parts consistent). Wechsler Intelligence Scale for Children, April, 1963. Results: CA 7.8, MA 6.7, Verbal Scale IQ 79, Performance IQ 96, Full Scale IQ 85 with a range of 80-90. School psychologist notes: "Along with the weaknesses noted in verbal skill development, it is suggested that on a basis of a generally weak profile of mental abilities, abstract development is also lagging to a serious degree." "Exhibits left-hand dominance. Has developed emotional feelings of inferiority." "It is on this basis that he be considered for retention in Grade Two next year."

Grade III Testing: The date was not given, but all parts of the Basic Reading Tests were marked "Very Low." A second WISC was given in March, 1964. Results: Verbal Scale IQ 95 with a range of 90-100; Performance IQ 97 with a range of 90-102; Full Scale IQ 96 with a range of 90-100. The CA was 8.7 and the MA was 8.3 "He is continually weak in the areas of essential development relative to abstract interpretation, memory development, and motor application." Note was also made of an unhappy, unproductive conference with the mother.

Grade Four testing: The Iowa Test of Basic Skills results: Composite grade placement 2.5, scores range from 1.5 in Reading Comprehension to 3.5 in Arithmetic Problem Solving.

Speech History. 1961-1962, errors f, d, for th; or omit b/v. 1/16/62, b/v usually okay. Recommendations: "(Case 2) had quite a time making the v sound. He still isn't consistent, but is improving." 1/8/63, b for v. 5/21/63, "Seems to be corrected. Works hard." May, 1965, the Grade Four teacher made the statement to this writer that (Case 2) was now "stuttering."

Communications. Grade One: "Case 2 was not well-adjusted in kindergarten and his mother was very anxious about his behavior in the first grade. She was very

determined that he did not repeat kindergarten."

Grade One: ". . . mother feels that he has improved remarkably from the first part of the year and she wants him to be promoted to second grade. They feel so strongly about this that a material reward has been promised him."

Grade One, later: ". . . anxious about his immaturity and his passing the grade."

Grade Two: ". . . She knew he was using first grade reading materials."

"Mother pleasant and feels very strongly that (Case 2) capabilities are more than the true picture."

Grade Three: "Really hard for him to learn . . . he can do some arithmetic. Won't try to learn to write--spelling seems impossible to him. They would like to have him remain in the third grade, hoping he'll "wake up" soon. They are willing to have him do anything but have him go back to the second grade."

Grade Four: "Very poor study habits (uses fingers to point to words). Writing improved. Has nightmares and bed wets. She wants him to repeat Grade Four if he doesn't snap out of it."

(Note: This material was taken from the records of parent-teacher conferences and other records in the cumulative folder.

Case Number Three

Home and family. Case 3 is a boy born May 3, 1955. There are two sisters older, ages thirteen and twelve. His father is a salesman in the immediate locality.

Health. Case 3 has good health, with few absences in the four-year period. His vision (Snellen chart) and hearing were marked okay. Diseases noted were chickenpox and measles. There were no behavior problems checked. The teacher had noted the following on 5/1/65: "poor posture, speech defect, appears to need sleep and rest, dark circles under eyes, poor muscle co-ordination, emotional disturbances." Two other notations, "Is courteous and considerate," and "Holds to school rules," were marked favorable throughout his school life.

School achievement, promotion, and retention. Kindergarten testing: The Pintner-Cunningham Primary Test resulted in these scores: CA 6.0, MA 5.11, IQ 99.

Grade One testing: The Metropolitan Readiness tests resulted in Total Readiness, Low Normal. The Basic Reading Tests scores were as follows: 10/30/61, Low Average; 2/12/62, Low Average; 5/28/62, Mid-Average.

Grade Two testing: The Basic Reading Test scores were as follows: 2/3/63, Very Low; 5/14/63, Very Low. The Wechsler Intelligence Scale for Children was administered by the school psychologist with results and comments noted here:

CA 7.11, MA 8.5, Verbal Scale IQ 100, Performance IQ 111, Full Scale IQ 106, range 100-112. The Intelligence Classification was High Average. " . . . It is possible for him to very quickly relapse into ineffective state of mental confusion noted as anxiety. It is felt that his formulation of ideas is difficult for him in any manner and tends to develop personal rejection . . . Since there exists some difficulty in interpretation of instructions, it is felt that caution is necessary in order to insure effective communication channels while working with him. It is felt that he hears little better than he speaks."

" . . . He is tired much of the time . . . fails to get to bed at a reasonable hour."

Grade Three testing: 5/21/64, Low.

Grade Four testing: Basic Reading tests, 2/3/65 Very Low (27), 5/18/65 Very Low (30). On the Iowa Tests of Basic Skills the composite grade placement was 3.3, with the lowest score in Arithmetic Concepts 2.7, and the highest in Punctuation, 5.7, 8/27/64.

Communications. This material was taken from the records of parent-teacher conferences and other records in the cumulative folder.

Grade One: "Case 3 did not like to sit and color like the girls did before they came to school." Teacher: "Mother feels school is good for Case 3."

Grade Two: "Mother not aware that Case 3's progress was slow and that he was not doing second grade reading. His study habits poor and general interest lacking." Teacher: "Mother not too pleased and somewhat disturbed."

Grade Three: "Parents want him to go on with his grade."

Grade Four: Grades, all failures. "Mother wants him to continue." Disposition, Social placement to Grade Five.

School principal's comment " . . . mother doesn't understand that Case 3 may be able to do school work at home, but not at school in the presence of others."

Speech history. Noted in Grade One by speech therapist, "f, d/th, s/sh, and ch; th seems to be okay. Still occasional s/sh ending."

APPENDIX B

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MATERIALS USED IN CASE STUDIES

1. Dolch, E. W. The Basic Sight Word Test, Basic Sight Vocabulary Cards, Phrases, and Nouns. Garrard Press, Champaign, Illinois. 1948.
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3. Kottmeyer, William. Teacher's Guide for Remedial Reading. St. Louis: Webster Publishing Company, 1959.
4. McCall-Crabbs. Standard Test Lessons in Reading. Bureau of Publications, New York: Teachers College, Columbia University, 1961.
5. My Weekly Reader. American Education Publications, 1250 Fairwood Avenue, Columbus 16, Ohio
6. Reader's Digest Reading Skill Builders. Reader's Digest Services, Inc. Educational Division, Pleasantville, N. Y., 1959.
7. Scott, Louise Bender, and J. J. Thompson. Phonics in Listening, Speaking, Reading, and Writing. St. Louis: Webster Publishing Company, 1962.
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