A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Special Education, Learning, and Reading Disorders

by

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ABSTRACT

THE VISUAL INTERPRETATION AND REMEDIATION PROGRAM

TEACHER'S MANUAL

In every classroom across America, teachers are facing a common dilemma. They are struggling to answer the individual needs of each child in their classroom. These needs span a wide range of diversity and include learning disabled children with mild to severe deficits.

Added now to this already awesome task, are the requirements of Congress' Public Law 94-142 which mandates the inclusion of the handicapped child in the least restrictive school environment. The implementation of this law means that the regular classroom will now have learning disabled students who also have other handicaps.

It is the responsibility of school districts to provide their professional educators with the proper tools to be able to diagnose and remediate the learning disabled children in their classes.

The Visual Interpretation and Perception Program is such a tool. It was created and designed to facilitate the diagnosis and remediation of deficiencies in visual percep-
tion and visual-motor skills. The rationale underlying the program is supported by recent research studies.

The Diagnostic Tests are organized into grade level test batteries. The tests may be given in small groups or one-to-one. After evaluation of the tests by the teacher, the student uses his individual Assignment Sheet to use the practice materials in the Remediation Kit.

With consistent and persistent use of the remediation materials, the student reaches a satisfactory level of performance. He then takes a Post Test. When he successfully passes that, he is rewarded and reinforced by doing an Art Design in that area.

For particularly severe deficits, the teacher may wish to assign the student to use of the colorful Flocked Cards which integrates the kinesthetic sensory modality with the visual modality.
Chapter 1

THE VISUAL INTERPRETATION AND PERCEPTION PROGRAM
TEACHER'S MANUAL
AN OVERVIEW

Introduction

Our learning disability children need help! Our classroom teachers need help! There is a dearth of programs available to help either group.

The classroom teachers need to be supplied with tools for diagnosing those students with learning disabilities. Identification of the disabilities is not enough. It is only the initial step. After the child's individual disabilities have been determined, the teacher needs to have the appropriate tools available to her to begin to remediate each individual child's deficiencies. This is a formidable demand to place upon teachers who already are charged with the responsibility of teaching their students how to read, write, and spell as well as become knowledgeable and proficient in mathematics, science, history, grammar, creative writing, health, music, art, social studies, and physical education. The teacher is also expected to simultaneously develop and instill in her students high moral values, standards of fair play, love of country, and the rudiments of good citizenship. This is an awesome task with which we
burden our professional educators who spend many more hours with our children each day than we do as parents.

**The Program**

The Visual Interpretation and Perception Program (V.I.P.) is one phase of a three-pronged PERCEPTUAL AIDS PROGRAM approach to aiding the classroom teacher or special education resource specialist diagnose and remediate learning disabilities.

The first prong is the Visual Interpretation and Perception Program (V.I.P.) for which this booklet is the Teacher's Manual. V.I.P. addresses itself to the diagnosis and remediation of visual perceptual tasks which would be relevant to the student's academic skills.

The second prong of the program is called the Auditory Interpretation and Perception Program (A.I.P.) which consists of tapes with worksheets in conjunction to be used at self-instructing listening centers to diagnose and then to help remediate the individual child's auditory disabilities.

The third prong of the total PERCEPTUAL AIDS PROGRAM is called the Visual-Motor Interpretation and Perception Program (V.M.I.P.) which presents a comprehensive manual of directed gross motor activities. These activities are designed to integrate and facilitate the student's global visual-motor movement patterns and processes.
The activities are sequenced with increasingly more complex and integrated bodily movement patterns taught at each succeeding level.

The PERCEPTUAL AIDS PROGRAM attempts to facilitate growth through individual diagnostic tests and individually planned remediation programs for each student. The programs give the teacher in the classroom the necessary tools to accomplish this goal. It also gives her a concrete item to include in her overall evaluation and presentation of each child's individual educational plan to parents, administrators or other school personnel.

The Visual Interpretation and Perception Program is specifically designed to help diagnose and remediate disabilities in the areas of Visual Perception and Dyslexia. A review of the literature in both of these areas is presented for your perusal in the following two chapters.
Chapter 2
A REVIEW OF THE RESEARCH LITERATURE ON
VISUAL PERCEPTION AND
VISUAL-MOTOR PERCEPTION

Introduction

Visual perception is an area which has been studied for many centuries. The documentation of interest in visual perception dates back into antiquity, hence it can't be considered a new discipline. Some important historical figures who have explored aspects of visual perception are Descartes, Malebancke, Locke and Molyneux, Berkeley, Condillac, Reid, Mill, Helmholtz, William James, Ames and Murphy, Gestalt and Hull, as well as Hebb. Kohler began his series of experiments in 1912, with Wertheimer, and is known for his Gestalt Theory of Perception. Hull proposed the theory of Connectionism, and Hebb's theory is Functionalism. A commonality in the theories is that the important source of facts for any of the theories is what we "see" or "perceive" in our everyday activities by directing our eyes to certain objects and then in understanding and undertaking actions in relation to them. (42)

Although much discussion, research, and speculation have taken place over the years, still the area of visual perception is beseiged by opposing viewpoints. The
first group to examine visual perception in more depth was psychologists. Later artists and philosophers began to examine it. Terminology was and is still inconsistent in this field. Psychologists, artists, and philosophers are looking at different aspects of visual perception and tend to construct terms which explain their orientation to the subject. Now educators are beginning to utilize the information obtained from research in the field of visual perception, so it is vitally important to understand who is doing the research, and if the study could have application to classroom situations.

Definitions

Many theories have evolved concerning the nature of visual perception with little agreement as to the results. Visual perception is controversial even in its many divergent definitions. One definition is, "Perceptual—all those processes concerned with the translation of stimulus energy falling on a receptor surface into the reports of experience, responses to that stimulation, and memory persisting beyond the termination of that stimulation". (34)

Another definition is, "Perception is an active process involving more than intellectual understanding of ideas". (8) As you become more aware of your own responses, they become more differentiated and
identifiable, which is a very active dimension of the conscious awareness you bring to objects and experiences in your environment. (8) A definition of perceptual skills from Breslauer (10) is, "Those abilities which enable the human to process concrete information, which are the foundation upon which one develops the capacity to manipulate abstracts." Vallett (56) states, "Perceptual-motor skills are the functional utilization of primary auditory, visual, and visual-motor skills." (37)

It seems most scholars who deal with visual perception feel a finer delineation of the processes is necessary. For example, the Tallahasee, Florida school district procedures for special education guidelines for 1975 delineate the areas as Perception (discrimination and closure), Memory, Association, and Reception. (15) Another source divides the areas into Sensation, Reception, Memory, and Thought. (34) A third study uses Surface, Form, Organization, and Color as its category headings. (22) Whatever the breakdown of the main headings may be, there are as many various sub-headings in use by the voluminous number of researchers.

A further breakdown by Valett (56) in the definition of the various concepts may be helpful in understanding the field.
Visual Acuity - the ability to see objects in one's visual field and to differentiate them meaningfully and accurately.

Visual Coordination and Pursuit - the ability to follow and track objects and symbols with coordinated eye movements.

Visual-Form Discrimination - the ability to differentiate visually the forms and symbols in one's environment.

Visual Figure-Ground Differentiation - the ability to perceive objects in foreground and background and to separate them meaningfully.

Visual Memory - the ability to recall accurately prior visual experiences.

Visual-Motor Memory - the ability to reproduce motor-wise prior visual experiences.

Visual-Motor Fine Muscle Coordination - the ability to coordinate fine muscles such as those required in eye-hand tasks.

Visual-Motor Spatial Form Manipulation - the ability to move in space and to manipulate three-dimensional materials.

Visual-Motor Speed of Learning - the ability to learn visual-motor skills from repetitive experience.
Visual-Motor Integration - the ability to integrate total visual-motor skills in complex problem solving.

Vallett (56)

The review of the research literature on visual perception will include studies in the areas of visual discrimination, figure-ground, separate processing mechanisms, integration with other sensory modalities, typical deficiency behaviors, evaluation of visual-motor training techniques, and visual-temporal training. The conclusion of the review discusses the possible implications for future research and for classroom use.

Visual Discrimination Skills

The study of visual perception is vast and complicated with many subdivisions of the term perception. One such subdivision is the term visual discrimination. Studies have been devised in which visual discrimination is investigated. These involve differentiations of visual perceptual tasks which become increasingly more difficult to perceive or discern. Detection includes discrimination (different from others) and recognition (having seen the form previously). Identification then follows, as does judgment. (61)

Visual discrimination deficits and reading are correlated, but a causative relationship may not exist according to several studies. (32, 41, 57)
A reader rarely has to discriminate single letters while reading. The discriminations required are generally more complex using multiletter combinations. The results of this study of 2nd, 3rd and 5th graders stated that students make more errors on match-to-sample tasks of many letters than those of one or a few letters. Poor readers do make more errors on longer words and given problems than good readers. (32)

The study by Paradis (41) agrees that word stimuli were significantly harder to discriminate than objects or letters. The results show that visual discrimination training should be provided on a selected basis to pre-readers.

A study of preschool children's ability to discriminate various graphic stimuli was reported by Gibson. (21) Although his report was somewhat limited, it indicates that selected preschoolers had developed visual discrimination skills enough to be able to discern and distinguish cursive-like scribbles from meaningful numbers and writing. Many children in preschool and most in kindergarten from middle socio-economic areas possess skills which are necessary to perform visual discrimination exercises before formal training. For these students it is not necessary to perform visual discrimination exercises before formal training, as they do not need to be
taught such skills. Paradis' study (41) further indicates that children discriminate the objects and the letters equally well.

This sheds doubt on the belief that discrimination of representations of objects and other nonverbal stimuli is a necessary prerequisite for reading instruction. It would seem from these findings that object discrimination could be eliminated and concentration should be placed on letters and words.

A major purpose of visual discrimination training is to help children make high speed discriminations and to reach a point where discrimination of letters and words is automatic. This purpose may be achieved through training which requires simultaneous matching of visually similar letters followed by practice in successive matching-to-sample of the same letters. This two-stage training provides practice in determining the distinctive features of letters and assists in storing the features in long term memory. (47)

Other recent research indicates that disabled readers do accurately discriminate the letters, symbols, words, and figures, but they incorrectly label them because of difficulty in making the verbal associations. To prove that disabled readers do not differ from normal readers in visual discrimination ability, per se,
24 third grade subjects with normal and disabled reader groups were tested upon their ability to reproduce tachistoscopic presentations of high frequency, low discriminability words. Both groups did equally well on reproducing the words by matching the words to forms. This might well indicate that poor readers have developed the ability to identify and match the necessary distinctive features of the words. They also wrote the words, and selected without verbalization the correct word from a group of words. The error rate was 5%. The ability to accomplish these three visual perceptual tasks seems to indicate that they do not have a deficit in visual discrimination. However when the subjects were asked to verbally identify these same words, significant differences appeared between the two groups. The learning disabled readers often answer with a graphically similar word. This study seems to indicate that one difficulty for poor readers may then focus around the verbal mediation association, but that they do accurately discriminate the stimuli. (2)

Support for the previous study's conclusion that most children can accurately perceive visual stimuli is given by this study. Its object was to test the appropriateness of visual discrimination exercises in reading readiness materials. The children's responses
were not verbal so the dimension of visual-verbal mediation cannot be compared. This study did also indicate, however, that before any visual discrimination training was given to the pre-school and kindergarten subjects, few of them had any trouble identifying objects or letters. Word stimuli were significantly harder to discriminate. It is suggested that reading readiness materials be provided to pre-readers only if it is shown that they need it. (1)

Different results were shown by research results with college students. They indicated that recognition will be made of irrelevant letters if there is a high similarity between the irrelevant letter and the target letter. (52)

**Visual Figure-Ground**

The role of figure-ground organization in visual picture memory was explored in a 1975 study. It indicated that alterations to the figure of pictures committed to visual memory are more easily detected than alterations to the ground. It was indicated that these perceptual processes interact with information storage and retrieval. (38)

Additional research states that subjects with learning disabilities have significantly greater difficulty in perceiving and visually organizing abstract stimuli such
as broken-up words embedded in an ambiguous background. Thus the premise that visual perceptual distortions made by poor readers relates to reading difficulties is confirmed. (17)

Separate Processing Mechanisms

Do we process different types of visual information with separate visual processing mechanisms, and if so, do they develop at a simultaneous rate? Research to determine the answer to these questions indicates that we seem to have a separate mechanism for processing memory of the positions of visual stimulus which seems as equally well-developed in five year olds as in adults, and a separate system for visually processing memory of items which is substantially lower in young children than in adults. However the ability to process both position and item information simultaneously increased with the age of the subjects. It may prove true that the most important developmental gain is a generalized ability to interrelate and integrate separate visual processing systems and thus increase the complexity and power of any overall processing sequence. (18)

Further credence is lent to the hypothesis that visual processing involves several separate processing mechanisms by a research study of successive processing of color and form from brief visual displays. Evidence
suggests the two tasks, color detection and letter naming, were accomplished by separate mechanisms. The color-detection mechanism functioned in a spatially parallel manner while the letter identification was done serially. (23)

Another study corroborates that item and letter identification are done serially. (18)

Yet another study showed a colored letter's location influenced which other letters were identified. Thus it appears that the color detection mechanism has the ability to draw the identify-naming mechanism to its location. (23)

This finding might be used advantageously in textbooks to emphasize key concepts or particular words.

Additional research indicates developmental differences in intake and storage of visual information. Subjects ranging from 5 year olds to adults were tested. The research states that the initial capacity for visual information intake does not change developmentally. No significant age differences were found at the earliest memory point of 50 msec. However it was found that developmental differences occur in visual memory. The visual memory capacity increases dramatically with age. (49)
More information about visual memory was correlated with the above results in a study designed to research the possible differences between dyslexic children and normal children in short-term visual information processing. The study placed particular emphasis on the early stages of such processing. The implication from the results of sequential displays indicate that the scan and retrieval process takes longer for dyslexics than normals. The results from the masking tasks also indicate that dyslexic children have a much slower processing time than normal children. Combined, these experiments show that significant differences exist between dyslexic children and normal children at early stages of visual memory and information processing. (53)

Visual Perception Integration With Other Sensory Modalities

The integration of the visual modality with other sensor processes has been explored in several studies. One research study looked at the integrational deficits in children with visual-perceptual-motor difficulties. Its aim was to assess the psycholinguistic and perceptual aspects of their differential performance. No differences were detected for motor performance alone between normal and learning disabled children in grades 2, 4, and 6 who were asked to trace geometric forms. However, a
significant difference showed up when the children were asked to combine this motor task with saying a short two-word phrase aloud. This difference was felt to be a possible diagnostic tool for learning disabilities, and it was explained as an indication of delayed development of the ability to superimpose process upon process. (45)

In the elementary school, the visual and auditory scanning processes are relatively unrelated in the early grades, but they become integrated in the upper grades. Visual scanning ability seems to develop gradually with no clear periods of specific growth spurts. On the other hand, auditory scanning development shows large gains between Grades 2 and 3, and Grades 4 and 5. (19)

A review which explored the integration of the visual and tactual modalities reached the conclusion that vision is the dominant and superior modality for all populations, age groups, and sexes. It was suggested that other modalities be used in integration with the visual mode until the optimal combination for learning is found for each child. (44)

The Value of Visual-Motor Perceptual Training Techniques

Much discussion has been set in motion over the past years concerning the value of the Frostig Visual Perceptual Training Program. To answer such discussion, a research study was devised which included ten teachers and twenty kindergarten classes. The experimental ten
classes were given the Frostig program for 15 min. each day for 4 1/2 months. Then all classes were tested on the Stanford Achievement in the first grade. The use of the Frostig program benefited these students' reading ability since achievement test scores for them exceeded the scores of those not in the program. (20)

There is little research which establishes conclusively that visual-perceptual-motor training directly improves reading test scores. However, this seeming lack of relationship is due to the short-sightedness of the present programs. Such training often includes tracing and copying of geometric forms by entire classes of children. Not all children need this training. For those who do need it, it provides experiences to make the child more skilled in discriminating, associating, integrating, and generalizing information that he perceives in his environment. This information may be classified as experience which we draw upon to give meaning to our reading. (5)

Heath, Cook, and O'Dell (28) investigated the effect of eye exercises on reading efficiency. A long-standing disagreement exists between opthamologists and optometrists concerning the value of eye exercises and training of the eyes to achieve improved visual perception. Optometrists have a high regard for the
training while opthamologists do not. The purpose of
the study was to investigate the influence of ocular-
motor proficiency on academic skills. The results
support the premise that ocular-motor proficiency can
be improved through training.

Investigators have not been able to relate specific
visual perceptual abilities to particular reading skills.
They have been content to obtain significant correlations
between total reading achievement and total perceptual
score. Also no specific systematic relation between
grapheme discrimination and word recognition skills was
found. Although the relationships did not increase,
grapheme discrimination errors generally decreased as grade
level increased. (3)

Related to the previous study is the argument as to
whether or not teaching the letter names to children has
transfer effects when learning words composed of the
letters. Samuels (48) states that caution must be taken
that causation should not be implied as to the high
correlation between letter-name knowledge and reading
achievement. He says I.Q., socio-economic background,
and letter name knowledge have complex interrelationships.
The high correlational findings are viewed by Samuels
as being, "A product of uncontrolled organismic or
environmental conditions."
Chisholm's study (12) was a partial replication of Samuels' study using simpler graphemes. In opposition to Samuels' conclusions, Chisholm's study indicated that letter name knowledge does aid the child who is learning to read.

The study by Vandever (57) found no differences in the number of words recognized by high phoneme-grapheme cue groups in comparison with the low group the first two days, but there were more words recognized by the high group on the third day of the study. The results seem to substantiate that phoneme-grapheme consistency does affect word recognition of first graders. Phoneme-grapheme consistency appears to be a useful tool for initial word selection.

Another controversial point in the value of visual-motor training is whether or not the practice of writing letters over and over in daily drills is helpful either in improving handwriting skills and/or in improving the child's reading ability. Can daily handwriting practice improve a child's visual-motor skills?

Barsch (6) says that daily rote drill for the purpose of habituating the proprioceptive pattern and improving the quality and accuracy of letter and number forms, reminiscent of the Palmer era, should not be totally rejected by modern educators. Critics claim that
the monotony of such a task leads to deterioration rather than improvement of the handwriting visual-motor skills.

Barsch (6) would agree that haste for completion of the task may cause the handwriting to worsen. However, he feels that the introduction of the very important concept of temporal pacing with a metronome will negate the deterioration effect and produce quite a different effect. He states, "Repetitive writing of letters or numbers, conforming each letter stroke to the beat of the metronome will quickly enable a teacher to identify a precise point of difficulty in the formation of a symbol as well as to note the exact tempo of demand which causes the execution to falter. All forms of lettering, cursive and manuscript, capital and lower case should be tried in consecutive exercises. Particular 'problem' letters will readily be apparent, suggesting individualized attention. As the accelerations are staged for each letter the tempo of comfort will be graphically evident. Accelerations should be deliberately staged to reach a point where the tempo becomes 'too fast' for the learners in order that each might gain a deepened consciousness of his own pace."

Barsch (6) states that the ordering of letters from left to right must be brought to a level of automatic action in which no cognitive energies are required to consider the shape and sizing of letter forms.
Certainly this patterning of left-to-right visual perception is a prerequisite of facile reading of English language books. Perhaps the insistent and consistent use of the Palmer Handwriting Method in the 20's, 30's, and 40's in the school systems of America is a part of the reason why so many adults of today can't remember many of their classmates having severe reading problems. The students had been so systematically trained in the left-to-right sequence of handwriting by daily rote drill that they had little trouble in adopting this visual patterning to the process of reading.

A study by Allington (2) gives support to the hypothesis of right-to-left as a normal visual entry pattern at early ages. In response to horizontal visual arrays of letters and shapes, significant differences between the hemispheres did exist with reference to the number of visual stimuli correctly identified. The group of subjects who responded in a right-to-left pattern indicated a left hemispheric superiority for the perception of letters and a right hemispheric superiority for the perception of shapes. This entry pattern and brain preferences were found in girls from three to four years old and in boys from four to six years old. As age increased in the subjects, the left-to-right entry response was developed and no asymmetry in brain hemispheric dominance was found.
It could possibly be an explorable hypothesis then that learning disabled children may not have developmentally reached that transition from right-to-left visual pattern response, with its accompanying asymmetric hemispheric dominance and possible interference of sensory processing, to the left-to-right visual pattern which has symmetric hemispheric dominance. Thus for the students with a maturational lag, reading disorders are likely to develop with the left-to-right pattern necessary to successfully read in English. It should be noted too that Allington's study stated that this right-to-left entry preference persists longer for boys. Could this be part of the explanation of why there are so many boys in the slow reading groups in the early grades?

A study by Harrigan (26) noted that there is practically no dyslexia or illiteracy in Japan.

Could it be that the brain preference for the right-to-left entry at the early ages when most children are beginning to try to read or to be taught to read is helpful in a language that proceeds from right-to-left such as the Japanese language does?

More support is given to the hypothesis of right-to-left as a normal visual entry pattern at early ages by a study on developmental differences in the field of
covert and overt search. The first grade subjects in the test showed a marked tendency to correctly identify a target letter if it was located on the right side of the visual array. (37)

It seems probable then that practice in the left-to-right visual entry pattern required for reading and writing in English would be desirable for young learners. **Visual Temporal Training**

Another approach to the training of children's visual organization is the temporal or Paced Method presented by Barsch (6). He contends that the less sophisticated reader must treat print as an adversary, often suffering defeat and reading at a slow, uneven, broken tempo. On the other side of the coin is the sophisticated reader who maintains a consistent, unbroken tempo even with difficult reading material. Barsch acknowledges the importance of word attack skills and their interdependence with tempo, but he emphasizes the developing and embedding of a temporal consciousness in the reader.

The child is asked to read from standard books in conformity to the pace of a metronome. Barsch states, "Word by word readers regularly become confused by the beat. The time pressure even at a slow rate, intensifies any error pattern in the child's reading and served to emphasize the temporal problem. Children who
had acquired a reasonable tempo in their reading readily fell into the patterning of the metronome and many became even more fluent as the rate increased. Children who had achieved no real tempo of their own often became completely unable to read any words under the time stress." Barsch says that the metronomic reading of a familiar passage can be a diagnostic tool to determine the potential for progress in remedial reading situations. Some ability to adapt to the beat usually indicates a more short-term remedial reading term while those who can't make any adjustments tend to become the more long-term remedial cases.

It is apparent from these findings that children can benefit from being trained within a visual-temporal framework to improve their reading ability, and that it can also be used as a diagnostic tool.

**Typical Visual Perceptual Deficiency Behaviors**

Many lists are compiled each year which give the parents and educators typical behaviors to watch for in the child which could possibly be an indication of visual perception problems. Here is a list taken from *Diagnosis and Remediation of Learning Disorders*:

1. Attention span shortens on higher level cognitive tasks compared to his use of manipulative materials. For example, mental arithmetic versus using craft
materials.
2. Uses finger or marker to maintain eyes on visual materials.
3. Experiences difficulty in copying from charts and/or chalkboard.
4. Writing is crooked, poorly spaced.
5. Writing is not kept on ruled lines of the paper.
6. Difficulty copying simple shapes (circles, squares, diamonds). (14)

Implications

The studies discussed are not in agreement in many areas. Does visual perceptual training aid in improving reading skills? Some suggest that it does aid in the mastery of the reading process. (3, 5, 20, 28, 41) Others state that although visual perception is often low when reading skills are low, the two are not actually caused by one another, and causation should not always be presumed. (32, 57)

If visual perception does affect reading, then the educator has a duty to teach visual perceptual skills to the students to improve their reading abilities. But the other question which still remains is this. Can visual perception be taught? If visual perception can be taught, again it is the duty of the educator to aid the learning process of the children by teaching that skill to the students.
The techniques and/or materials available to teachers for training visual perception skills is very limited. For those students who may already possess these skills, training is not needed, and they should be moved ahead and not forced to do exercises which will be of no value to them in reading or perceiving. On the other hand, those children diagnosed as needing visual perceptual training should be placed in a suitable program.
Chapter 3
A REVIEW OF THE RESEARCH LITERATURE ON DYSLEXIA

Introduction

Dyslexia is an oft-abused term used indiscriminately these days as a catch-all for any reading disability. So-called dyslexia, or word-blindness, is an isolated defect of cortical functioning as first postulated by Morgan in 1896, and in that sense dyslexia may seem to be an uncommon condition. However, if we use the viewpoint of modern cognitive psychology for the definition, we may find that a milder and variable sort of dyslexia may be more common. In this view, an impairment or lag in any cortical area can cause disturbance in a variety of sensory, expressive, and thought processes due to interruptions of mediation and thus create a mild or variable form dyslexia. This is not to indicate that a condition of specific "word blindness" does not exist as this condition has been seen to occur as a result of brain trauma. However, people can and do relearn how to read. (26)

This review will not be addressing the organic dyslexia syndrome based upon neurological dysfunction separately from the specific developmental dyslexia which is most commonly defined as being two years below
grade level in reading. Several studies indicate that there seems to be no appreciable difference in the performance or the remediation techniques of the organically-impaired dyslexic and the developmentally delayed dyslexic. (7, 23)

Definitions

Several definitions of dyslexia may prove helpful in highlighting other aspects of this disability.

Both in the literature and in fact within schools, a child is considered to have reading disability when he reads two or more levels below his grade. (5)

Dyslexia is a specific cognitive dysfunction with the concomitant inability to organize graphic symbols "to make sense". Primary developmental dyslexia is a specific difficulty in learning to read, often genetically determined, in a child of at least average general intelligence with no obvious brain lesion or significant impairment of hearing or vision. Initially the child with primary developmental dyslexia has no emotional disturbance or resistance to conventional methods of instruction. (46)

This review of the literature will look at the recent research on dyslexia in the areas of cerebral dominance, neurological dysfunction, diagnostic approaches, remediation, and implications for the classroom.
Cerebral Dominance

When Black's (7) study of neurological dysfunction and reading disorders failed to find significant differences between neurologically normal or neurologically impaired retarded readers, he decided to investigate further the performance of only the neurologically impaired subjects. He classified these 25 subjects into three new sub-groups. One group showed primarily right-sided neurological impairment; the second group, also of nine subjects, showed primarily left-sided impairment; the last group of seven subjects showed bilateral impairment.

The three groups were tested on the WISC Verbal Scale I.Q., the WISC Performance Scale I.Q., the Frostig Perceptual Quotient, and the WRAT spelling and reading subtests.

Based upon previous research with adult subjects, Black (7) hypothesized the locus for language skills is in the left hemisphere and the locus for non-verbal visual-motor skills is in the right hemisphere of the brain.

The left-sided non-impaired subjects did perform relatively more adequately on the WISC Verbal Scale, while subjects with right-sided non-impairment performed more adequately on the WISC Performance and Full Scales
and on the Frostig test representing overall visual-perceptual performance. The achievement test results of the subjects with left-sided impairment were significantly inferior to that of right-sided impairment subjects in both reading and spelling.

The significant achievement test differential in the areas of reading and spelling showing inferior performance by the left-side impaired subjects suggests that children with impairments of the language dominant left hemisphere may have relative difficulty in learning academic material which is language oriented. (7)

Witelson's study (60) lends support to the above premise that the left-side of the dyslexic's brain is deficient. It adds another dimension however, that the right side of the brain may in fact be overdeveloped and its spatial functions operate in both hemispheres. Her study used 85 right-handed boys from 6 to 14 years old who had been identified as cases of developmental dyslexia. The subjects were then given a battery of four tests considered by the researcher to be indices of hemisphere specialization. The results indicate that with dyslexics, spatial functions are represented in both hemispheres in contrast to the specialization in the right hemisphere in normal children. Dyslexics have the typical pattern of left-hemisphere location of linguistic functions. Although the left hemisphere
may mediate the typical cognitive functions, the study results indicate a deficiency in left-hemisphere processing by dyslexics. Thus these two possible neural correlates may result in a cognitive pattern of deficits and biases in dyslexics which inhibit their reading ability. They may have a deficient linguistic, sequential, analytical cognitive mode of processing information and an overdeveloped use of the spatial, parallel, holistic mode.

Interestingly enough this may give support to Harrigan's (26) study which indicates that dyslexics do much better in learning to read Chinese characters which stand for whole words, which are according to Witelson's (60) research, perceived more easily by the right side of the brain than by the left which perceives in a sequential, phonemic method which is deficient in the dyslexic.

Witelson's study also correlates well with the research evidence found by Feild. (17) Subjects with reading disabilities had significantly more difficulty in perceiving and organizing broken-up words embedded in ambiguous stimuli. If, as Witelson indicates, the dyslexic's left brain function is impaired and the right brain function is intact or overdeveloped, it would be more difficult for the dyslexic to perceive the specific, detailed broken-up words in a mask of
ambiguous stimuli than it would be to perceive the whole figure.

According to Witelson's study, this pattern of cognitive deficits biases probably makes dyslexics read with a predominantly spatial, holistic cognitive style and neglect the phonetic-sequential strategy. Such an approach in learning a phonetically coded language such as English may be difficult for them.

In Lockavitch's (35) study, he states that reading disabled children often have lateral and directional confusion. Laterality is the ability to distinguish between and label the left and right sides of the body. Directionality refers to knowledge of left and right in space beyond the body. Lateral dominance is the preferred side of the body. Lateral dominance and/or mixed dominance does not have an effect on reading ability while directionality and laterality do have an effect upon reading and learning ability. In Lockavitch's review, he has come up with several conclusions based upon years of working with children who have lateral and directional confusion:

1. Laterality precedes, and is independent of, directionality.

2. Directionality is dependent on laterality.
Remedial help must be given to the disabled reader to help him develop the concepts of laterality and directionality. Mastery of these two concepts will enable the child to progress in the acquisition of reading skills. (35)

**Neurological Dysfunction in Relation to Reading Disorders**

A research study involving children with significant reading disorders was divided into two groups. All subjects in both groups had normal intelligence, were in regular classrooms, but had failing grades in reading and inadequate performance on achievement testing. One group consisted of 25 right-handed reading disabled subjects with a mean age of 8.24 years, a mean WISC Full Scale I.Q. of 94.20, and a mean reading retardation level of .98 years who had been identified as being neurologically impaired. To be so classified the subject had to show positive findings on at least two of three indices of neurological dysfunction. These three indices were: birth and developmental history problems, pediatric neurological examination problems, and/or irregular electroencephalogram.

The second comparison group of 25 subjects showed no evidence of neurological dysfunction based upon the same three indices. This group had a mean age of 8.13 years, a mean WISC Full Scale I.Q. of 95.32 and a mean
retardation level of .99 years.

Results of the study indicate that the school performance of early elementary school children whose reading retardation is based upon a neurological dysfunction did not differ appreciably from that of reading disabled with no neurological dysfunction. However, it is certainly possible that behavior variables such as hyperactivity and distractibility between the neurologically impaired or not neurologically impaired reading disabled may be significant in classroom behavior.

The only area in which the neurologically impaired disabled readers were significantly inferior was on tests of visual perception. Remediation in the area of visual perception may be helpful for this type of disabled reader.

Thus this study suggests that neurological impairment findings for a child should not be a necessary criterion for the placement of a child in remedial reading programs as this criterion would eliminate those children who are in need of such programs and show no neurological dysfunction. The learning problems of children with no neurological dysfunction appear to be as common and severe as those shown by children with identifiable neurological dysfunction and their need for special programs and remediation is similar. (7)
It appears probable that neurologically caused reading disorders are expressed not only in relation to the nature and locale of organic disorder, but also in relation to the abstractness of the reading task. For example, children who are reading disabled have more trouble with the abstractness of a string of phonemes to be put together by the phonic method of teaching than they do with learning a single Chinese character representing whole words or ideas. (26)

Diagnostic Approaches For Reading Disabled or Dyslexic Children

Stanley and Hall's (54) first study provides evidence that significant differences exist between dyslexics and normals at early stages of visual information processing. The population sample was 66 children of which 33 were dyslexic. Two measures of visual information processing were compared. With the first measure 2 parts of a stimulus were exposed sequentially for 20 msec. each at increasing inter-stimulus intervals. (ISIs) Dyslexics took longer on both separation and identification thresholds. With the second measure, letters masked by dots were presented for 20 msec. with the interstimulus interval between letter and masker being incremented over trials.
Dyslexics required longer ISIs than controls for correct identification of the letter. The differences became far greater when the letters were visually confusing such as b or d and c or o.

Support for the use of visual processing time as a diagnostic tool was given in a later study by Stanley and Hall. (53) Again 66 children, including 33 dyslexics were used to recall visual letter arrays which were presented for varying durations. The results showed significantly slower recall time for the dyslexics indicating differences in level of performance rather than differences in kind of visual information processing. Both studies support the hypothesis that the longer visual processing time required for the dyslexic is a developmental lag in visual memory.

In contrast Witelson's (60) study does not agree with Stanley and Hall's hypothesis that dyslexics slower visual recall performance is an indication of simply a maturational lag. Her study of cerebral dominance indicates a hypothesis of qualitative neural deficit rather than a neural maturational lag.

It is often desirable for the classroom teacher to be able to have some brief measures of intelligence available to her in working with disabled readers. A recent study used 59 subjects who had all showed at least two years discrepancy between word recognition
and both mental and chronological age. The Slosson Intelligence Test, Quick Test, and Peabody Picture Vocabulary Test all correlate significantly with the more extensive WISC. Thus they can be used as fairly rapidly administered instruments in the classroom to measure word recognition performance. If the teacher wishes a rough, global measure of intelligence in a very brief time and with minimally trained staff, this research indicates that PPVT is the better measure. It also seems to be the better of the two picture vocabulary tests as the pictures are more clearly drawn and less confusing to the children. (43)

Another research study indicated the Z-score discrepancy method for identifying reading disabled children was an additional technique for identifying reading disabled children in the early elementary grades. (16)

It seems that group testing can be a valuable tool for early screening of children who appear to be a high risk for development of reading disorders. Hartlage and Lucas (27), authors of this research study, developed a group test covering five variables demonstrated to be involved in the acquisition of reading. These subtests were auditory sequencing, visual-motor skills, auditory spatial skills, visual sequencing, and combined
auditory and visual spatial skills. These tests can be administered to a whole class in about forty-five minutes. The children involved in the study were 1132 first grade children who were given this group screening test on the first day of school. Then the children were randomly assigned to classrooms using three methods of teaching initial reading skills including phonetic, look-say, or special teaching alphabet methods. Eight months later they were retested using the same instrument which had added a sub-test on identification of some capital letters. Results showed no difference in reading readiness among the groups taught by any of the three methods. However the screening test instrument showed significant levels reached by the multiple correlation coefficients of the subtests with the WRAT reading levels for students of both sexes and any of the three teaching methods. The study thus seemed to demonstrate that the test instrument could be useful in early group screening of children so that intervention may be planned for those children who seem likely to become disabled readers. The subtest scores were also useful in indicating in which areas the intervention techniques should be planned.

Another study by Bogle (9) indicates the validity of using screening tests in the early grades to find
possible high risk children who might develop reading problems if no intervention is planned for them. She suggests using the failure on any Reading Readiness Tests in kindergarten or first grade as a "flag" to give more tests and take a careful look at the child.

A series of perceptual closure tests has also been found useful as a tool for diagnosing potential disabled readers. It was found as a result of a research study that subjects with reading problems had significantly more difficulty in perceiving and organizing broken-up words in a field of abstract stimuli. A group of nineteen perceptually abstract tasks, consisting of 19 simple four-letter words placed in a confused background, were constructed. The relationship between performance on these tasks and reading disability was examined using data obtained from 40 eighth grade male students, 20 with reading disability and 20 without. Students with reading disabilities took no more time to make the responses than normal readers, but they made significantly more errors in the number of correct responses. (19)

Kapelis' (30) study also supports the studies of Pikulski, Bogle, Feild, and Hartlage and Lucas in concluding that tests in the early grades can help to identify high risk children who may become disabled readers unless intervention is planned for them.
The present study indicates that the Slingerland Prereading Screening Procedures (PRSP) in combination with the Language subtest of the Meeting Street School Screening Test (MSSST) are the best predictors of end-of-year reading achievement scores with a 110 first grade pupil population. The author cautions however that it is never advisable to place children in permanent school reading groups based solely on the results of screening tests.

Another tool for the diagnosis of dyslexia or potential dyslexia through psychological testing is presented in a study to investigate further the validity of three cognitive structure hypotheses which were postulated by Myklebust, Bannochie, and Killen for the overall field of learning disabilities of which reading disability is to be considered a major subset. WISC test scores indicate that the mental abilities of severe reading disabled children differ from normal children in several ways: (1) difference-overall ability arrangement, as indicated by the hierarchical factor structure for subtests, (2) less effective ability integration, as indicated by a smaller proportion of subtest variance attributable to the g-factor, and (3) less ability organization, as indicated by community estimates. (59)
Rosenthal (46) looked at the self-esteem of the dyslexic child. In our society, a high value is placed upon academic achievement. The ability to read plays a major role in school and in other areas of life. The dyslexic cannot read menus, books or letters. Many dyslexics have trouble graphically arranging symbols on paper (dysgraphia), even though the cognitions are clear in their own minds. Dyslexic children are often called lazy, purposely negativistic or mentally retarded by the people around them. Parents and teachers are likely to express tension and frustration toward the child who fails to read without discernible cause. Rosenthal had 20 dyslexic boys ranging in age from eight to fourteen in Group 1. Twenty normal boys were in Group 2 and twenty asthmatic boys were in Group 3. The Coopersmith Inventory was given to each subject. (On tape for the dyslexics). The twenty dyslexic boys showed significantly lower self-esteem than the other two groups. Ten of the dyslexic boys whose families had information about dyslexia showed significantly higher self-esteem than the ten other boys whose families had no information about dyslexia. This indicated that a parent education program may be helpful in raising the dyslexic child's self-esteem. The teacher's estimates of classroom behavior of all the boys had showed no
significant differences among the three control groups thus eliminating that as a variable.

Support for Rosenthal's conclusion that dyslexic children tend to have a lower self-esteem may be found in tangential form in a study of peer popularity in learning disabled children. Reading disabled children are one of the more obvious and major subsets of learning disabled children. This study showed that in 20 fourth and fifth grade classrooms, the peers of learning disabled children did give them a higher number of votes on Social Rejection and fewer votes on Social Attraction. (11)

Diagnoses for Dyslexia Based on Physical Evaluations

Some studies may help the classroom teacher to diagnose students with dyslexia or reading disability based on physical tests. One such test that may be helpful is that of Delayed Auditory Feedback (DAF). A research study was designed which indicated that the error rate for dyslexics increased from 5.0 (no DAF) to 14.0 (DAF) - a mean difference of 9.0. Under identical test conditions, the error rate for normals increased from 1.1 (no DAF) to 5.0 (DAF). Hence the tests magnified the differences in performance between normals and dyslexics on delayed auditory feedback. The classroom teacher would have to rely upon help from the school's audiometrist to administer this test to a
Can classroom teachers use the human figure drawings of their class to determine potential disabled readers? It is commonly believed that the human figure drawings of disabled children show greater immaturity than those of normal children of the same age. This is usually considered to be due to poor laterality concepts in disabled children which make it difficult for them to distinguish between and label the parts of the body. (35)

In another study, the figure drawings of 51 disabled children and 130 normal children showed no differences except that the disabled children in the intermediate age groups were more likely to draw eyelashes. Among the adolescent children, the disabled children's drawings were superior on 5 of the 16 items and showed no difference on the other 11. The disabled children included much greater detail on head-related items and were also more likely to include bodies than normal children. (24)

The studies presented so far have explored using the physiological facets of our body and the psychological. This next study will combine both as it deals with oral syntax— the mouth and the mind. Oral syntax seems to be a possible diagnostic tool for assessing dyslexic readers. The study used 20 normal and 20 dyslexic
second graders as a population sample. Subjects were chosen based upon performance on two silent reading tests. Nine measures were used to assess syntactic abilities. None required reading or writing. Dyslexic subjects were found different from normal children at a high level of significance on seven of the nine measures, all favoring the normal children. Dyslexic children were significantly deficient in oral syntax. Thus a test based upon oral syntax may be a way to identify children with reading difficulties. (58)

Deviant behavior is another probable diagnostic tool for discovering reading disabled children. There seems to be a significant difference in behavior between children who have reading disabilities and those who do not based upon the results of an interesting longitudinal study done by Bogle. (9) The school cumulative record card was chosen as the tool to obtain necessary information for the study because it was felt that it would eliminate bias as much as possible. It was felt that no teacher, regardless of personal feelings, would jeopardize a child's future by submitting a negative comment regarding his deviant behavior on his permanent, official record unless it was a serious and/or recurrent deviation. The cumulative records of 96 children, the sixth grade of an inner city school,
were analyzed with respect to reading disability and behavior problems present in the sixth grade as well as passing or failing the Reading Readiness Test in the first grade and comments on achievement of independent reading ability by the fourth grade. It was decided that the ability to read independently should be achieved by the fourth grade - the pivotal point. Based on the assumption that if independent reading was not achieved by the fourth grade, behavior problems would develop, the cumulative folders of the sixth graders were analyzed looking for any such data. Results showed a significant difference with children with reading problems exhibiting more behavior problems. The Chi-Square tests show that reading disability contributes most to this difference. Also significantly more children who had failed the Reading Readiness Test in first grade had sixth grade reading disability. Ninety percent of the children who exhibited deviant behavior in sixth grade had failed the first grade Reading Readiness Test. It was concluded then that reading disability plays a determining role in deviant behavior.

**Remediation for the Disabled Reader**

Now that many studies have been presented regarding the nature of dyslexia, suggestions for diagnosis of
it, or the potential for diagnosis of possible high risk children who may be prone to developmental dyslexia or have undiagnosed organic dyslexia, it is important to look at remediation techniques for the reading disabled.

Harrigan (26), armed with the premise that there is practically no dyslexia or illiteracy in Japan, explored the teaching of reading to seven first graders who were clearly having reading difficulty. Japanese children are taught both a syllabary (kuna) and Chinese ideographs (kanji) adopted in ancient times to stand for whole Japanese words. The subjects spent 15 minutes each day learning fifteen Chinese characters representing common English words. They were pronounced in English as the Chinese ideograph was shown on a 2-by-2 inch card telling its meaning and then asking the child its meaning. When the child had mastered the ideograph on a mastery recall test, a new ideograph was added. Another 15 minute session was held each day teaching 15 English phonemes arranged into nine consonant-vowel-consonant commonly known words. The words were shown on the printed 2-by-2 inch cards and the appropriate sound of each phoneme given in sequence. The child was required to repeat each sound correctly before going on to the next phoneme. The sounds were blended for the child then and he in turn had to blend them to
pronounce the word. The results indicated that the subjects quickly learned to recognize from eight to fifteen Chinese characters, and to arrange them in sentences. In comparison, only two to seven English words were learned with more time required per word and more errors being made in sentence reading. In short, the children seemed "hung up" on phonemes and the associated tasks of learning and blending them becoming restless and distractible in the process. The researcher postulated that perhaps the children are so confused by the phonemes which are not attachable to anything meaningful in their experience, that they develop a failure set. This failure set may develop because of their failure to maintain previously learned meaningless phonemes and because of their emotional reaction to their failure and confusion. Thus Harrigan concluded that we should explore a less abstract, less phonetic approach to reading emphasizing instead of acquiring syllable recognition or meaningful word units to facilitate the acquisition of reading.

Can the Initial Teaching Alphabet be used as a remediation tool for severely disabled readers? Alaine Lane's (33) research study states that it can. She used fourteen sixth graders who had no ascertainable perceptual deficits and were reading at the second grade level or below. They were considered "hard-core"
nonreaders as they had previously been sent to reading labs or learning centers for the purpose of reading remediation with the traditional alphabet with little demonstrable improvement. These children spent 100 days learning and using the i.t.a. alphabet for reading. By the end of the time they had made the transfer back to the traditional alphabet. The positive results provide evidence, in the researcher's opinion, that the i.t.a. is a tool for remediation of the severely disabled readers in the United States. Lane based her research results on a plus 1.1 year improvement on the Gray Oral Reading Test over a 100 day period. She makes the assumption that in grades 1-6, in all reading programs, the children read aloud, and for most of those who improve in oral reading, "It can be assumed that they would also improve in silent reading."

It is the contention here that silent reading and oral reading serve two different purposes. Oral reading is a communication process and silent reading is a comprehension process for the reader. The improvement in one does not necessarily determine an improvement in the other.

Some relevant classroom remediation techniques for the disabled reader are presented in an article entitled, "Of Course I'm Not Stupid, I Just Don't Know My Right Hand From My Left" by Lockavitch (35). He shares a
trifold plan for remediation of severely reading disabled children which he feels can be used successfully by any classroom teacher. The first step involves explaining to the child in his own terms what the teacher believes may be causing his difficulties, i.e., that he doesn't know his right from his left yet. The second step is called ego-boosting. It is done with a nonverbal approach called by Lockavitch the "laying-on-of-hands" method. It involves a great deal of physical touching of the child by the teacher such as patting on the head or hugging. He feels a teacher who cannot comfortably touch a child, cannot teach them. The third step is to begin teaching a child at the level at which he actually operates rather than at the level on which he is expected to operate such as a grade level. (35)

Remediation for reading disability should be started as early as a potential for such disability can be identified. Research indicates that failure on Reading Readiness tests should be the cue for the taking of a complete pre-natal history on the child. This pre-natal history should be taken in the child's home by the school nurse to gather essential information about the family interactions, cognitive styles, and methods by which the child does learn. If the nurse can impress upon the child's family, the importance of their input into that child's education, she may be
responsible for sidetracking or breaking the failure syndrome for him and possibly for the whole family. She should be competent to analyze not only the degree of pathology or deprivation contributing to the child's learning problems, but also the degree of "wellness" she finds - the family's inner strengths. The school nurse must then be able to communicate meaningfully her observations and suggestions to the child's classroom teacher. Together they must develop an educational plan of intervention to help the child achieve his maximum potential and avoid the development of a reading disability (9).

Gottesman's (25) longitudinal study was made of 58 severely reading disabled children who had been referred to a medical clinic for developmentally disabled readers. The subjects were evaluated as to progress made in reading achievement after a 3-to-5 year period of special education intervention. The focus of the report was on reading achievement over time with disabled readers. As a group, the subjects showed minimal gains in reading and remained among the poorest readers for their age. One-third of the children slowly achieved a minimal degree of functional reading skill. Since these were mainly the older children who were up to the age of 18 years at the time of retesting, there may be a correlation with Witelson's (60) study which shows
evidence that dyslexics have a bi-hemisphere representation of spatial functions until at least age 14 and supports a theory of qualitative neural deficit.

A high proportion of the children in the Gottesman (25) study were diagnosed as having neurological and or psychiatric disorders. This proved unrelated however to the level of reading failure within the group.

This finding supports Black's (7) conclusion that reading retardation based upon neurological dysfunction did not differ appreciably from that of reading disabled children without neurological dysfunction. It was concluded in the study that severely disabled readers, regardless of etiology, should not be evaluated on reading achievement in relation to their peers, but in relation to their own progress with the goal being a level of functional literacy of 4th grade or above by adulthood no matter how slowly it may develop.

Implications For The Classroom

The special needs of children with dyslexia require special diagnostic procedures and remediation procedures if they are to receive meaningful help during their early school years. Without this special help, the children will most probably dislike the school setting which will be a failure situation for them, and they
most probably will also dislike themselves perceiving themselves as "dumb". Public and private educators must address their goals to adequately meeting these needs.

Gottesman et al (25) point out that reading disabled children should have special programs and curricula consisting of appropriate audiovisual methods, increased teacher instruction, recorded books, community visits, learning by doing, and other suggestions as the main means of instruction.

The intent of Congress' Public Law 94-192 is to provide special instruction for all learning disabled and handicapped children in our country.

The purpose of the V.I.P. Program is to help answer the needs of the learning disabled child in the areas of visual perception and visual-motor perception. Let's examine then the methodology, the underlying rationale, and the supporting research for the Visual Interpretation and Perception Program in the next chapter.
Chapter 4

THE VISUAL INTERPRETATION AND PERCEPTION PROGRAM

Introduction

The review of the recent research literature on visual perception and dyslexia leads one to the conclusion that there are a myriad of contradictory conclusions based upon the various studies. There is no facet of the field of visual perception which seems to have clear-cut parameters or unrefutable empirical studies to give guidelines within which to develop a scientific hypothesis concerning the subject.

Because of this, it becomes necessary to proceed on a hypothesis based upon the conclusions reached after having given and evaluated approximately 1100 visual perceptual skills diagnostic tests from kindergarten through the sixth grade at an elementary school located in a high socio-economic suburban environment in a predominantly white area of a large city. The results of evaluating 1100 of these diagnostic tests leads to two courses of action. The first is to develop a hypothesis concerning learning disability children. The second is to design and produce a program which will effectively help to remediate each child's individual visual needs as shown by these diagnostic tests and to give the
classroom teacher or other resource person an important tool to work with to meet the demands of Public Law 94-192 commonly called "mainstreaming" in which each child is required to have an individual educational plan.

Organizational Structure

The Visual Interpretation and Perception Program (V.I.P.) consists of Diagnostic Tests and a Remediation Kit. After the students have been given the diagnostic tests, the teacher evaluates them and marks the proper areas for further practice on the child's individual Assignment Sheet. This Assignment Sheet is kept in a folder at the child's desk so that he can work in the V.I.P. Remediation Kit either independently or at a time assigned by the teacher.

The child takes his individual Assignment Sheet to the Remediation Kit and chooses a Practice Card from any of the areas that are marked for him to practice. There is no sequential hierarchy of skills within the kit. He takes a plastic cover and grease pencil or water-base felt pen to practice that skill. When he feels that he has improved enough, he has the teacher or aide check the Practice Card. If sufficient improvement has been made, the student is allowed to go to the Practice Kit and take a Post Test. The Post Test is evaluated by the teacher or aide. If satisfactory, the student is
rewarded and reinforced by going to the Remediation Kit and taking an Art Design for that particular area. After he has colored in his Art Design, it may be placed on a classroom bulletin board or stored in his V.I.P. folder in his desk. If his Post Test is not satisfactory, the child is reassigned to the Practice Card for that area.

Rationale

The undergirding rationale of the V.I.P. Program is that visual perception and visual-motor perception skills are constructed in an overall hierarchy of broad stages. These broad stages are developmental and sequential in nature, but unrelated to age.

Within these broad stages are numerous substages. Only the substages within the first two broad stages seem to be developmental and sequential in nature.

Within the third and final broad stage, the substages are not necessarily sequential in nature. Cultural expectations may help to determine which of the substages, in the last broad stage, the child explores first. The broad stages and the substages can be accelerated with the proper training and experiences.

These visual-motor skills, both gross and fine, are sequential and hierarchial in nature, such as Piaget's Stages of Cognitive Development. (50) The accomplishing of the next higher level is dependent upon mastery of
the preceding level of integrated body movement. Piaget's stages, however, are age related.

Unlike Piaget's view, it is the contention here that the motor skill levels are not related to age, but rather to each child's individual level of progression through the sequence. This contention supports the view propounded by Jerome S. Bruner in the discussion of his Stages of Cognitive Development. (50) Bruner states that the cognitive levels of intellectual functioning can be accelerated by proper training. In the Nature versus Nurture dichotomy, he chooses the Nurture position. Readiness can be taught and a student can gain skill and speed with the proper training and experiences. Bruner claims that you can teach anything to anyone at anytime as long as you are intellectually honest in recognizing and diagnosing what stage the student is at in his growth. He says that we can do things to facilitate growth. The V.I.P. Program rationale concurs with that premise.

The supporting rationale for the Broad Stages and the Substages of visual perception and visual-motor skills is presented here for your examination. The purview of the V.I.P. Program falls within the last Broad Stage in the area of visual-fine motor skills.
Broad and Substages of Visual Perception and Visual-Motor Skills

I. Primary Perception-Mobility Broad Stage

A. Horizontal Visual Position Integration - Substage - The baby lies on his back or stomach unable to lift his head. This necessitates a visual integration of his environment from a "bottom-side up" position.

B. Vertical Visual Position Integration - Substage - When the baby is picked up and held in a vertical position, his brain must make an accommodation to visually perceiving the same elements of his environment in a "right-side up" position as being the same elements he perceives in his horizontal position.

C. Inverted Visual Position - Substage - The baby is able to raise his body with his arms and legs to a crawling position and holds his head up to perceive his environment. This requires a further refinement of visual perception to integrate his horizontal body position with the vertical head position and recognize the same elements of his environment from yet another position.
D. **Eye-Extremities-Body Exploration Substage** -

The baby spends many hours exploring the relationship of the integration between his visual ability and his motoric ability. For example, putting his fingers and his toes in and out of his mouth. The kinesthetic reinforcement of what he visually perceives begins to define the reality of his world for him.

This last substage, eye-extremities-body exploration, of the primary Broad Stage occurs simultaneously with the first three substages which progress in a developmental sequence.

II. **Secondary Perception - Mobility Broad Stage**

A. **Erect Sitting Visual Perception Substage** - The child has developmentally attained the stage of being able to sit erectly, unaided, in a vertical position with his head held vertically erect also.

B. **Erect Standing Visual Perception Substage** - The child is able to stand with head and body in a vertical erect position unaided.

The program rationale contends that these two substages develop sequentially, but training and experience can advance their accomplishment by the child.
III. Advanced Perception - Mobility Stage

A. Walking-Writing Substage - The child's ability to begin to walk or scribble with a crayon are most usually developed after he has mastered the ability to sit or stand vertically erect unaided. However, once the child has reached this advanced stage in his visual and/or motoric development, there seems to be a wide divergence in individual children of the more advanced skills that are attained. For example, after learning to walk (running is considered an accelerated walk), some children may learn to skip before they learn to hop. Others may learn to jump rope, ride a bicycle, or broad jump first. In terms of small-motor writing-type skills, because of the school curriculums used in most of the nation, a child who comes to school unable to write is most often taught to print before he is taught to write. However, culture and socio-economic background are variables here affecting which small-motor skill the child learns first. In many middle and upper middle-class homes, the children are taught to write and print all the letters of the alphabet or certain words before they begin formal schooling. Some children come to school already knowing how to read to some degree. This is often construed
as the mark of a good and caring mother and the budding of a young genius in the child.

B. Fine Art - Athlete Substage - This advanced substage in most cases is developed by extensive training or extended experiences in the visual-motor areas. In rare cases the child has the ability to be a Picasso or an outstanding athletic without extensive training. In most cases the child or adult engages in art training which involves elements of visual perception such as figure-ground, visual discrimination, and perspective which advances that person's visual awareness to a superior level.

In the cases of most advanced visual-motor ability, the athlete has participated in an intensive training program to bring him up to that superior level. An Olympic athlete such as Mark Spitz is an outstanding example.

Within the Advanced Perception-Mobility Stage, the substages are not necessarily learned in any particular sequence except that possibly dictated by the person's environment or interest. These visual perceptual skills can be acquired more quickly by appropriate training and experiences.

The basic concept for the creation of the PERCEPTUAL AIDS PROGRAM, of which the Visual Interpretation and
Perception Kit (V.I.P.) is one of the integral parts, is that the visual perception and visual-motor skills necessary for the child to achieve in the school classroom can be diagnosed and remediated by the use of the program.

Procedures for Administration

V.I.P. Diagnostic

I. Giving the Tests - Each Remediation Kit contains a set of the Diagnostic Tests. The tests are marked by grade level although a child in kindergarten may be able to do well on a higher level test. The Diagnostic Tests are designed to pick up any visual perception or visual-motor perception skills deficiencies which may not be developed well enough to handle the culturally determined standards needed by the school age child to do his required school tasks. To facilitate the ease with which these tests can be given, the directions for each subtest are printed on the test itself so that the teacher, an aide, or the child himself, if he is able to do so, can read them.

II. Timing the Tests - There is no time limit on any of these tests.

III. Grouping - The Diagnostic Tests may be given in small groups. The most preferable setting for giving the tests is, of course, a one-to-one situation where the
Tester can note on a piece of paper if the student makes any changes in hands with the pencil, any rotation of the test booklet, any unnatural rotation of the child's head or body or an unusual writing position to accommodate for an inability to draw a line in a horizontal, diagonal or vertical plane. It is also important to note if the child begins his drawing of the horizontal lines from left-to-right or from right-to-left. As noted in the research literature, children tend to show a natural tendency for a right-to-left visual entry pattern in girls up to about age four and in boys up to about six. (2) If the student has a reading problem and shows a preference for a right-to-left entry pattern on his V.I.P. Diagnostic Test, it may be an indication that trying to read textbooks that require a left-to-right entry pattern is difficult for him and a part of his reading problem.

The tester should also note any students who start the vertical lines from the bottom-to-top. This visual entry pattern may also be causing a problem in being able to visually track from the top-to-bottom on a page of reading or easily moving down to pick up the next line of print.

Tester should record any undue tension in the hand
holding the pencil or in the face or body during the testing situation.

While there is no time limit for the test, the tester will become experienced enough to make a value judgment as to whether the student worked quickly and confidently or slowly and uncertainly. If the test was taken extremely slowly and uncertainly, an additional three check marks should be added to the scoring. This behavior most often indicates visual-motor inefficiency in the fine muscle area and is an additional piece of information in the total of the whole picture by which the teacher or the resource person will evaluate the whole perceptual performance profile.

IV. Evaluating the Test - How does the tester score the test? The scoring system is based upon the number of check marks which are recorded for each subtest. The check marks are made by the test evaluator based upon the test samples.

Sample pages from the diagnostic tests will be shown to indicate performance and scoring at all three levels. (Appendix E)

The check marks are tabulated and entered upon a separate Scoring Copy Assignment Sheet for use only by the teacher. (Appendix B)
A chart is provided to indicate the student's rating on each subtest. (Appendix C)

If a student's subtest scores are in the fair or poor range, the test evaluator places a check mark on the student's individual Assignment Sheet for work in the Remediation Kit of the V.I.P. Program. There is a duplicate copy of the Assignment Sheet which is marked at the same time. This "Scoring Copy" Assignment Sheet is stapled to the front of the Diagnostic Test Booklet for the conferences with the parents, administrators or other resource personnel as that child's INDIVIDUAL EDUCATIONAL PLAN for remediation of any deficient visual perception and/or visual-motor perception skills as required under P.L. 94-142. This V.I.P. Assignment Sheet gives an immediate "Perceptual Profile" in the areas most likely to affect classroom academic performance.

If results from the Auditory Interpretation and Perception (A.I.P.) Diagnostic Test and the Visual-Motor Interpretation and Perception (V.M.I.P.) Diagnostic Test (gross motor skills) are also available, the teacher and other evaluators have a three-pronged view of the student's "Perceptual Profile".
V. Assignment to V.I.P. Remediation Kit - Diagnostic testing or testing of any kind can be very anxiety producing to students. First the teacher must be sure that she indicates that the V.I.P. Diagnostic Tests are NOT to be taken for a grade. She should tell the students that the tests will not be returned to them and are useful only to show the teacher what areas in which the student will be working in the V.I.P. Kit. She should emphasize again when she passes out their individual Assignment Sheets that no one has passed or failed the tests. Also it should be stressed that there is no "higher" or "lower" section on the V.I.P. KIT such as are used by certain individualized reading kits that are often found in the classroom. The student does not need to feel ego-threatened because he was assigned to a "low" color or area of the V.I.P. KIT. There is no such thing in this kit. Any area that is checked on each student's individual Assignment Sheet may be started first. The skills to be remediated are all in the Advanced Perception-Mobility Broad Stage in which the substage skills are not sequential in nature and the student may begin in any area that catches his interest first. This gives him an element of decision-making in his own educational plan.
The V.I.P. Remediation Kit

Directions to the Student

Step 1. Keep this ASSIGNMENT SHEET in a folder.

Step 2. Use the PRACTICE KIT in the sections which the teacher has checked off above for you.

Step 3. When you can do the practice card very well, try a POST TEST for that section. If you do it well, go to Step 4. Otherwise go back to Step 2 again.

Step 4. When the teacher says you have passed your POST TEST, you may color the ART DESIGN for that section.

Practice Cards (Plastic Cards)

The student chooses a PRACTICE CARD from the KIT in one of sections marked on his individual ASSIGNMENT SHEET. (Appendix A) At the same time he takes a plastic sheet and a grease pencil from the front of the KIT. The plastic sheet goes on top of the PRACTICE CARD. The student practices with the grease pencil or water-base felt tip pens. A sheet of paper towel or a Kleenex erases the student's practice on the plastic cover sheet like a "Magic Slate" so the child may practice again and again until he learns to train his visual-motor coordination to duplicate what is on the practice card. The plastic
covers save many sheets of paper and add an intriguing motivational dimension.

When the student feels he has a very good reproduction on the PRACTICE CARD covered with a plastic cover, he shows it to the teacher or an aide. If the reproduction is not accurate and still shows a need for the training of visual-motor integration patterns, the teacher encourages the child to continue to use the PRACTICE CARD with the plastic cover. If the reproductions are now very good, the teacher or aide gives the student permission to try a POST TEST in that same area.

Post Tests

The child returns the PRACTICE CARD, cleaned plastic cover sheet, and grease pencil to the V.I.P. KIT and goes to the POST TEST section where he pulls out a paper POST TEST which is a replica of the Diagnostic Test which he took previously and functions as a PRE-TEST. The student now uses his regular pencil to do the POST TEST. If the student does not show an improved visual-motor integration, he is asked to use the PRACTICE CARD again the next day. If the test is done well, the teacher will put her initials or gold star or some recognized mark of success in the ASSIGNMENT SHEET column marked "POST TEST PASSED". At this point the student receives a built-in reward factor. He is allowed to go to the ART DESIGN for that area.
Art Designs

The Art Designs serve a two-fold purpose. (Appendix D) They are as indicated above a reward factor or goal for successfully passing the POST TEST. However, they serve another function.

When the students are first given their INDIVIDUAL ASSIGNMENT SHEETS back after the test, "everyone" in the class is assigned into the V.I.P. KIT. Obviously, not all the students in any class will need some kind of visual perception training. Those students that need none still have their ASSIGNMENT SHEETS marked, but their "x" marks are in the ART DESIGN COLUMN. Thus everybody in the class begins working in the V.I.P. KIT and no student feels that he has "failed" the test and that is why he must work in the KIT. Each child has his own V.I.P. Folder at his desk in which he keeps his approved POST TESTS and his completed ART DESIGNS. It lends motivation to working in the V.I.P. KIT to put completed ART DESIGNS up on the bulletin board! When they have completed all of their POST TESTS and/or ART DESIGNS, the students just phase individually out of the KIT.

Flocked Cards

For the students who seem to be having great difficulty with the PRACTICE CARDS or seem to be losing
interest in tracing over the plastic cover sheets, switch these students to the colorful FLOCKED CARDS.

On these cards, the students trace the geometric shapes, letters or lines or whatever they need to practice by tracing with their fingers. This gives a new dimension to help their visual-motor integration process by adding the kinesthetic element. Some children will learn more successfully initially in this manner, and then they can make the transfer back to the PRACTICE CARDS.

Research to support the value of kinesthetic or digital tracing of letters or words is given in a research article by Dr. Lloyd Thompson (55) in an article on learning disabilities.

Another study indicated that although vision is the dominant and superior modality for all populations, age groups, and sexes, that other modalities should be used in integration with the visual mode until the optimal combination for learning is found for each child. (44)

For some children the use of the visual modality with the stronger tactile kinesthetic reinforcement of the V.I.P. FLOCKED CARDS may be a necessary adjunct before using the PRACTICE CARDS with the plastic cards and grease pencils or felt pens.
Format, Rationale, and Research and Discussion For
V.I.P. Diagnostic Tests and Remediation Techniques

I. Visual-Motor Tracing

A. Format

The V.I.P. Program utilizes Diagnostic Tests and Remediation Practice Cards, Post Tests and Art Designs to diagnose and then to remediate any deficiency in the student's ability to adequately trace horizontal lines, vertical lines, and diagonal lines as well as geometric shapes.

B. Rationale

The broad stages and substages of visual perception skills and visual-motor perception skills can be accelerated by proper training and these skills are not necessarily age-related. This leads to the theoretical construct that any child who shows an inability to trace well several types of lines or to trace accurately some basic geometric shapes needs remedial training in that area.

C. Research and Discussion

Formal school training puts demands upon the child that he may not have been exposed to in his home environment. (40)

It is often not evident that the child has learning
disabilities until he enters kindergarten or first grade. In school settings, children need to acquire, if they do not already possess it, the ability to trace all types of lines and geometric shapes when the teacher begins to teach the students manuscript or printing. The printed symbols for letters and numbers are composed of geometric shapes combined with all types of lines. The letters and numbers are expected to be written on horizontally lined paper in a left-to-right progression.

A student whose V.I.P. Diagnostic Test shows difficulty on the Visual-Motor Tracing subtest may have difficulty with learning to print and/or with following visually a horizontal line of reading material in his readers in the left-to-right visual entry pattern and in a top-to-bottom pattern thus being unable to move easily down to the next line of print.

Consistent training on the plastic covered Practice Cards with erasable grease or water-base felt pens will help to train the child's ability to trace and to follow accurately visually and motorically horizontal, vertical, and diagonal lines, and simple geometric shapes.
The Visual-Motor Tracing materials in all areas are developmentally sequential with the shortest lines and simplest and large-size geometric shapes at the kindergarten level and the most complex at the sixth grade. This sequence only indicates a minimal standard necessary to perform the academic school work expected at those grade levels. The kindergarten child reads and is expected to write short sentences while the sixth grade child is expected to read and write significantly longer sentences. This does not preclude the fact that many kindergarten and older children may already have such a well-integrated visual perceptual and/or visual-motor perceptual system that they can do the V.I.P. Diagnostic Test for higher grades very accurately. The purpose of the program is to diagnose and remediate those children who do not meet usual school standards.

Research supports the need to train children in their areas of deficiency. Kirk (31) is one proponent of the rationale which, "teaches to his weakness and improves it". He believes that the disability should be remediated first. Then the child can more easily learn the other skills he needs.

In an article from the American Journal of Psychiatry, Dr. Lloyd Thompson (55) cites Laura Bender's own statement that in the performance of children with dyslexia, squared figures become rounded, dots are replaced by
loops, diamonds are squared, oblique lines become vertical or sometimes even horizontal. On the V.I.P. Visual-Motor Tracing Diagnostic Test, these types of deviations are readily apparent.

More verification that inadequate copying or reproduction of geometric forms can be an indicator of learning disabilities is mentioned by Paine. (4) He states that tests of praxis, which are skilled performances of certain learned or consciously planned acts, are poor in children with learning disorders. This is most commonly tested by the psychologist by some test of reproduction of geometric designs, either by copying as in the Bender test, or by reproduction from memory in the Graham-Kendall test, or in the assembly of designs from the Kohs blocks. Relative disability in perception of shape as applied to geometric designs carries over into the perception of letters.

The remediation by practicing the tracing of the various horizontal, vertical, and diagonal lines, and geometric shapes of the Practice Cards in the V.I.P. Kit helps to train the student's eyes and hand to accomplish tasks indigenous to the school situation such as reading, writing, spelling, and arithmetic.

Arithmetic requires positioning the numbers in accurate vertical columns within given place values of
numbers. If a child places a number in the "tens" column rather than the "hundreds" column, he will certainly be unable to calculate the correct answer. So the ability to visually perceive and place numbers in accurate vertical columns is a necessary prerequisite in arithmetic.

Vallett (56) describes Visual-Motor Speed of Learning as the ability to learn visual-motor skills from repetitive experience.

By using the V.I.P. Program, deficiencies of varying degrees of severity can be diagnosed by the tests and then the appropriate remediation can be accomplished by repetitive practice within the given areas in the V.I.P. Kit. Progress is evaluated by the Post Tests and when the progress has reached a satisfactory level, the student is reinforced and rewarded by coloring Art Designs for that area. The Art Designs have been carefully created to further reinforce the training of that area, but in a new and exciting way.

II. Visual-Motor Reproduction

A. Format -

The Visual-Motor Reproduction area of the V.I.P. Program is similar to the Visual-Motor Tracing area, but it moves one stage beyond it. On these Diagnostic Tests and in the Remediation Kit, the student must draw the horizontal, vertical, and
diagonal lines and geometric shapes by copying rather than by tracing. This is usually more demanding of visual-motor integration for most children.

B. **Rationale**

If a child shows a deficiency on his Diagnostic Test, then he should be assigned to the Remediation Kit for repetitive practice to be able to improve his ability to reproduce the types of lines and shapes which seem to be necessary for adequately performing his school work.

C. **Research and Discussion**

The research cited as a basis for the Visual-Motor Tracing area also applies as a basis for the Visual-Motor Reproduction area. Dr. Paine (40) particularly mentions the reproduction from memory of geometric designs in the Graham-Kendall test as an indicator of learning disabilities in children. He also indicates that teachers are well aware that the learning disabled child's messy writing is most probably due to their inability to adequately reproduce the shapes of the letters.

They are the keys, along with the Visual-Motor Spacing Test which appears at almost every grade level, to the student's Perceptual Profile of his proficiency or deficiency in the area of visual-motor perception skills.

III. Visual-Motor Spacing

A. Format -
The Visual-Motor Spacing Diagnostic Test and coordinated Remediation work consists of series of "x" marks evenly spaced along a horizontal and/or vertical lines. The child is asked to continue making "x" marks using the same size and spacing as in the sample. In the primary grades the "x" marks are large and widely spaced. By the fourth grade level test, the "x" marks are small and much more closely spaced. At this level the child is also required to continue the even spacing and size on a vertical place as well as a horizontal place.

B. Rationale -
Children who have difficulty with the proper spacing of these "x" marks will probably also be having trouble with the proper, even spacing required in the writing of numbers in long columns.
for the more complex addition, subtraction, multiplication and long division problems that are part of the fourth grade curriculum in most schools. He may also be exhibiting problems with misnaming words in reading or leaving letters out in his spelling. This child may not be seeing all of the individual letters in a word because of poor Visual Spacing skills.

C. Research and Discussion

There is little in the research literature that addresses the problem of visual spacing.

Barsch (6) addresses himself to the role of temporal awareness in the learning disability child. He states that the learning disability child has a lack of a well-developed temporal awareness in many areas including writing and reading. In his book, Each to a Different Drummer, he advocates the use of a metronome to help the teacher teach the child an even, unbroken tempo. He emphasizes that each child has his own innate tempo, some faster, some slower. By use of the metronome, the teacher may be able to speed up and to help even out a child's tempo which has been slow and broken. The ability to space "x's" or letters evenly can
be equated to an inner rhythm or temporal awareness which if deficient can help to create learning disabilities in a child. Therefore the children whose Diagnostic Test indicates a deficit in visual-motor spacing should be assigned to the V.I.P. Remediation Kit for repetitive practice to help them develop a sense of even, rhythmical spacing of "x's".

IV. Shape Recognition

A. Format -
The Shape Recognition materials are not evaluated in terms of any visual-motor skill but in terms of the visual perception of a figure identical in shape to the one given as a sample in a box to the left of a row of other similar shapes.

B. Rationale -
Children who have difficulty choosing a geometric shape from a row of shapes with similar identifying features may be having difficulty identifying letters with similar features to other letters. Even more importantly these children may be having trouble recognizing words with similar outline forms. In the teaching of reading or often spelling by a "sight" technique, the teacher emphasizes the overall outline shape of a word noting the number
of letters that are "tall letters" and the "below the line" letters to create a shape silhouette in the student's mind. If a child has difficulty in recognizing similar shapes, he may confuse words such as "pet" and "yet". Children having trouble with shape recognition need training by repetitive outlining of the shapes they are confusing to help them remember the salient features of that shape.

C. Research and Discussion -

In Dr. Paine's (40) study concerning learning disordered children, he cites the fact that astereognostic difficulties can be a critical test in diagnosis of such children. Astereognosis is a disability in recognizing shapes visually or in recognizing objects' shapes by palpation. The test used involved a considerable number of complicated shapes which the child had to identify from outline drawings, feel and name, or else feel and identify from a duplicate set.

The V.I.P. Kit will help to train children who have astereognostic difficulties to recognize geometric shapes by integrating their visual and kinesthetic modalities when practicing shapes on the Flocked Cards and/or Practice Cards.
V. Letter Recognition (Within Words)

A. Format -

The Letter Recognition materials require the recognition of a printed letter of the alphabet in a box on the left side of the paper with the identical letter placed within several words to the right of the box often placing similar letters in juxtaposition to the letter to be identified. Section A of the test uses the entire lower case of the alphabet while Section B uses the entire upper case of the alphabet.

B. Rationale -

While a child may recognize a letter singly, then when the letter is placed within a word which has visually similar letters in close proximity, the child who has this type of visual discrimination problem will also erroneously underline similar letters or not recognize and fail to underline the given letter because of visual interference of the juxtaposition of the similar letters. Research confirms this.
C. Research and Discussion -

As indicated by a 1976 research study which was titled, " Discrimination of Letter Combinations in Good and Poor Readers", students tested in the 2nd, 3rd, and 5th grades made more errors on match-to-sample tasks of many letters than those of one or two letters. Poor readers do make significantly more of such errors than good readers. (32)

Another study found that college students often will make incorrect choices of similar target letters. (52)

The study by Paradis (41) concluded too, that word stimuli were significantly harder to discriminate than single letters or objects. His results show that visual discrimination training should be provided on a selected basis to pre-readers as some children do not need such training.

Of course, visual discrimination training must not only be provided selectively to pre-readers as Paradis suggests, but selectively also for the beginning reader and the poor reader. The V.I.P. Diagnostic Test for Letter Recognition
within words will help to determine if this type of training is necessary for an individual child.

Samuels (47) states that a major purpose of visual discrimination training is to help children make high speed discriminations and to reach a point where discrimination of letters and words is automatic.

This is also a major goal of the V.I.P. Remediation Kit.

The young child just beginning to be trained to recognize meaning from printed symbols may confuse his direction, omit or substitute letters, and fail to associate specific sounds to letters.

Activities that require patterning, such as reading, are especially hard for the learning disabled child if he is unable to perceive distinctive shapes of letters, see how they fit into words, or how words flow into sentences.

VI. Intersecting Letters and Intersecting Shapes

A. Format -

The Intersecting Letters and Intersecting Shapes materials are designed to test and remediate any
deficiencies in the discrimination of visual figure-ground. The materials use intersecting letters for upper grades and/or intersecting shapes for primary grades. Section A has every letter of the upper case printed alphabet superimposed with another letter of the alphabet. The letter to be discriminated is shown in a box on the left side of the page. On the right side, that letter is intersected with another letter. There are three such intersections for each letter. The directions at the top of the page tell the child that the test booklet may be turned in any direction to recognize the letter. Section B of these intersecting letters materials uses the same format with the lower case alphabet letters.

B. Rationale

Repetitive training will help the learning disabled child to be able to distinguish the figure from the ground by learning to attend to the salient features of any letters which he may have missed on his Diagnostic Test. Often in beginning readers or poor readers, letters printed side by side in words may be indistinguishable to them as individual figures separated from the ground of the word itself. This letter
proximity in a word may cause visual interference because of the inability to discriminate the "letter figure" from the "word ground".

C. Research and Discussion -

Vallett (56) defines Visual Figure-Ground Differentiation as the ability to perceive objects in foreground and background and to differentiate them meaningfully.

In general, figure-ground difficulties include disturbed perception of form, shape and depth. Difficulty or inability to differentiate the figure from the background is often an indicator of learning disability. A visual form may not be consistently integrated as a meaningful whole and seen as separate from its background. For learning disability children, figure and background are merged so that neither stands out prominently. With this visual impairment, it is difficult to comprehend printed material and the printed symbols are seen only as meaningless visual designs.

The fact that many learning disability children suffer from a handicap in visual-figure ground discrimination is supported by various research studies. (14, 17, 61)
VII. Reversals

A. Format -

The Reversals material in the V.I.P. Program involves two sections. Section A involves single letter reversals. The single letters are placed in a box at the left side of the paper. The directions ask the student to circle all the letters in the row like the letter in the box. Section B places words commonly subject to reversals in the box at the left side of the paper. The directions ask the child to circle all the words like the words in the box.

B. Rationale -

Any child who shows reversals of either single letters or words needs training in the recognition of those letters and words to the point where the child no longer makes the reversal errors. Reversals may signal a visual disorientation which would make the recognition of letters and/or words in the reading and writing processes difficult.

C. Research and Discussion -

In a research paper defining the specific problems encountered at school with learning disordered children, it is stated that these
children display a tendency to reversals in reading and spelling as often noted by the classroom teacher. It notes that dyslexic students have a great tendency to read words backwards, a problem which carries over into writing and spelling so that letters are written with a 90 degree reversal or out of order. (40)

Reversal problems are generally associated most frequently with learning disability by the public.

VIII. Position Concepts

A. Format -

At two grade level Diagnostic Tests, Kindergarten and 2nd grade, the concept of directionality is tested. On the Kindergarten test, the concepts of left, right, up and down are checked. The four boxes in the center of 4 large squares have arrows radiating out from the boxes in four directions. In the center of each box is a direction-right, left, up, or down. The teacher or aide reads the word in the center of each box and asks the child to circle the set of arrows that matches the word she has read.
B. Rationale -

Learning disabled children often have problems with the concepts of directionality. Directionality involves knowing right, left, up or down away from the body, while laterality involves knowing the same concepts as they relate directly to one's own body. Children need to understand the concepts of directionality to follow directions in their school work. They are told to begin to read the words in their pre-primers and primers from the left side of the page, or to look at the picture at the top of the page. They are taught to print with a straight line and then to make a circle to the left or right of it for the letter "d" and "b". Much of their beginning academic success is based upon their knowledge of directionality concepts.

In the Position Concepts at the 2nd grade level, the concepts of near, far, over, down, up, under, bottom and top are examined.

C. Research and Discussion -

Silver and Hagin (51) report they did find an extremely high percentage of children with reading disability who had defects in right-left
discrimination. This same result was reported by McFie. (36)

IX. Maze

A. Format -
At the 5th and 6th grade levels, the Maze Test is a part of the test battery. Two mazes are presented. The directions tell the student to put their pencil on starting point A and without lifting the pencil, draw the shortest path to point B, the end point, without crossing any lines.

B. Rationale -
Children at the 5th and 6th grade levels should be able to perceive the "whole" of the maze and be able to successfully complete it according to the directions. When grading this test, it is important to note any crossed lines or stops and starts with the pencil. After having evaluated 1100 V.I.P. Diagnostic Tests, there is noted a correlation in many cases with learning disability and the inability to perceive the maze as a whole.

C. Research and Discussion -
There is no research concerning this rationale
at this time. Perhaps some future study will address itself to this possible correlation.

X. Figure Completion

A. Format -
At the 5th and 6th grade level, the Figure-Completion materials are a part of the program. Complex figures are presented in a box at the left side of the page. The student is asked to reproduce the figure on the right side of the page.

B. Rationale -
The rationale for the Figure Completion Material is the same as that for the Visual-Motor Reproduction, but the figures to be reproduced are commensurately more difficult with the upper grade level need to distinguish more complex and smaller print of the letters, numbers and symbols.

C. Research and Discussion -
The same research and discussion that is presented for the Visual-Motor Reproduction material is applicable here.
Chapter 5

MAINSTREAMING, DISCUSSION, AND SUMMARY

THE IMPACT OF "MAINSTREAMING" ON THE CLASSROOM

Introduction

The teacher in a regular classroom usually has a wide range of learning abilities in her class. Too often teachers equate these abilities with I.Q. score. There is a vast number of children whose learning ability is impaired by a disability of some type which is unrelated to their intelligence. These children's intelligence is within the average range or it can range above or below average and includes the highly gifted or the handicapped. In other terms then, disabilities can hinder learning at any level of intelligence. This makes it imperative to diagnose these disabilities and to then implement a remedial program.

An additional crucial dimension has been added to the already difficult task of giving effective help for the learning disabled child to the regular classroom teacher. Now added to her responsibility will be the handicapped children who will be placed in her classroom by September 1, 1978. The Congress of the United States has passed a legislative bill labeled Public Law 94-142 or the Education for All Handicapped Children Act of 1975.
The primary goal of P.L. 94-142 is to provide free, appropriate education opportunities for all handicapped individuals requiring special educational services. The implementation of the provision of this act have commonly been called "Mainstreaming". The concept embraces moving the handicapped children out of special education classes or schools and placing them into the regular school classrooms or the "mainstream".

Requirements of Public Law 94-142

All individuals with exceptional needs 3-21 years of age who require a special education are eligible for services funded under P.L. 94-142. All such children ages 3-18 must be served by September 1, 1978 and all those ages 3-21 must be served by September 1, 1980.

P.L. 94-142 makes the state responsible for insuring that these services are provided. Thus, the standards of the State Plan under P.L. 94-142 will apply to special education programs in other public and private agencies, as well as to local educational agencies.

The priorities of this law are to serve the unserved first; then to serve those most severely handicapped children within each exceptional type who are inadequately or inappropriately served at the present time.
Services To Be Offered Under P. L. 94-142

Each individual with exceptional needs is to have an individualized written instructional plan designed for his or her special educational needs. This plan is to be reevaluated on at least a yearly basis by appropriate professional personnel and the parents or guardians of the child. Programs should be developed so as to integrate the child into the regular classroom or regular school activities as much as possible, to the extent that such placement is appropriate. For those students for whom integrated programs are not appropriate, the individualized plan must provide for the necessary special day class or other appropriate specialized setting.

Records must be confidential for each child, with only the parents and appropriate professional personnel having access to private individual files.

Procedures must be established for insuring parental rights for participating in the assessment, placement and reassessment of their child.

Implications

With requirements such as these to be met under P.L. 94-142, it is imperative to furnish the regular classroom teacher or the special education resource specialist with the proper tools to accomplish the task.

The Visual Interpretation and Perception Program
can become one of the teacher's most important tools!

DISCUSSION

Introduction

It has been known for almost a century that learning difficulties have created academic problems for many children. They may, and often do, however, also presage the development of psychological problems. Acquisition of the basic skills is considered essential in our culture for the acquiring of secondary skills whether these are to satisfy intellectual curiosity, for their occupational value or solely for leisure time activity.

One of the few common denominators in the area of disabled learners is their lack of any common behavioral pattern or common set of deficiencies. This lack then certainly demands an individualized approach to the diagnosing and remediation of each learning disabled child. This demand is met by the individualization offered in the V.I.P. Program and it also helps the classroom teacher meet the demands of Public Law 94-142 for an individual educational plan for each child. Repetition of routine instruction not geared to the student's visual perception and visual-motor perception needs or retention in the same grade will not effectively solve the problem.

It is important to remember also that learning
disabilities are not necessarily related to intelligence. The learning disordered child may show overall functioning well within normal or even gifted ranges as measured on an intelligence scale, but his performance may be quite low so that test results show sharp inconsistencies with his mental abilities.

The underlying cause of a child's learning disability is usually not discernible by the classroom teacher or resource specialist. This fact need not be a matter of concern. Developmental lags, whether due to slow maturation, minimal brain dysfunction, emotional overlays, or other causes, may be overcome with the proper diagnosis and remediation training. It is almost superfluous to note that the earlier these disabilities can be discovered, usually the shorter the time required to correct them. Thus, diagnosis in the early years is important.

Critchley (13), writing about the prognosis for a developmental dyslexic child, states, "There is no justification for anything less than optimism provided only that dyslexics are correctly diagnosed at an early age, and are granted without delay the services of special remedial teaching at the hands of sympathetic experts."

Thompson (55) adds, "There can be no doubt that unrecognized or untreated dyslexia plays an important role in school failure, school dropout, unemployment, poverty,
and delinquency."

Paine (40) comments upon the children with minimal cerebral dysfunctions saying that, "In any event, by thoughtful management, periodic reevaluation, and appropriate selection of courses, children with milder degrees of organic cerebral dysfunction should be able to go through the educational process at a speed and to an ultimate degree which is useful and acceptable, although probably usually below that to be expected from I.Q. alone. The more severely involved patients, and those unwisely managed or unrecognized, turn up with disproportionate frequency in child guidance clinics, in groups of school dropouts, and even in juvenile courts." He adds, "The majority of these children, and particularly those less severely affected, will have to be, and probably should be, educated in regular classes with as much understanding and as many of the appropriate concessions as possible." Further, he states, "It is well known to every educator and school psychologist, and to those physicians who have worked with the problem, that different degrees and proportions of the different possible disabilities exist in an almost infinite number of permutations and combinations. Every affected child is in some way different from every other...."

It is these differences that the V.I.P. Program is designed to diagnose and remediate within the confines
of the regular classroom as well as in specialized remedial teaching situations.

Classroom Use of the V.I.P. Program

In the past it has been traditional for the teacher to refer any child with suspected learning disabilities to the school psychologist for evaluation. The shortage of school psychologists and their need to also identify the gifted students to qualify their school for additional funds leaves little time to handle all of the learning disability referrals. It may take months to get diagnostic evaluation. After the psychologist's evaluation of the learning disability, then she has to schedule time to meet with the classroom teacher to try to design an appropriate remediation plan for that child. Often this means the attempted creation of various materials by the teacher for the individual child. Realistically, the teacher with thirty to forty other students and an entire curriculum to be responsible for, is unable to find time in her busy day to design individual materials for remediation for each of her learning disability children as well as providing enriching materials and experiences for the gifted and being sure not to neglect giving special individual attention to the average child in her class - a tall order!
The V.I.P. Program is able to supply the Diagnostic Tests to every child within the classroom and then individual Assignment Sheets are provided based upon the results of each child's test. The child then follows his own individual educational plan in the V.I.P. Remediation Kit. The Kit has built-in motivation factors with its plastic cards acting like "magic slates" to cover the Practice Cards thereby saving the teacher time and reams of paper at the mimeograph machine. Post Tests provide an evaluation tool for progress and the Art Designs on various colored paper become art projects to be proudly displayed on classroom bulletin boards. For the special child who needs a little more help, there are the brightly colored, heavily flocked cards to add the tactile-kinesesthetic dimension to the remediation process. Thus the V.I.P. Program offers a complete tool for the harried classroom teacher to meet the mandates of Public Law 94-142 with an individual educational plan for the visual perception and visual-motor perception needs of each child in her class.

Directions For Future Research

After the evaluation and scoring of almost 1100 V.I.P. Diagnostic Tests ranging from kindergarten classes through sixth grade classes in a white, high socio-economic suburban neighborhood, results indicated a higher percentage of children with moderate to severe learning disabil-
than had originally been hypothesized. In the early grades the percentages ran as high as ten to twenty-five percent of each individual class. However it can be expected that the incidence of learning disabilities will rise with the increased use of screening tests.

Parents and teachers are relying less and less on the rationale, "Oh, he'll outgrow it!" to explain learning difficulties and behavior problems. They are beginning to become more knowledgeable in the recognizing of symptoms indicating visual and other sensory modalities disorders. Thus more children with learning disabilities are getting the help they need. Further research and development of behavioral checklists will aid in identification.

Future use of the V.I.P. Program in an inner city school in a low socio-economic area would make an interesting comparison with the results of the present 1100 Diagnostic Tests from a white, suburban, wealthy school population.

Numerous recent studies and review articles postulate the theory that reading disability is attributable to emotional or environmental factors. "Studies of deprived or disadvantaged children reveal that many of them are retarded in learning when they enter school and may never catch up. It is claimed, too, that most of these deprived children seemed to be on a par in development with other
children during the first year or two of life..... There is evidence that dyslexia has a causal role (often unrecognized) in school dropout, unemployment, and poverty. Therefore, many of the parents of today's deprived children may have been forced into poverty areas by their dyslexia, and so the handicap is passed on from generation to generation. It is doubly difficult for a dyslexic child to escape from the ghetto. Deprived children may suffer also from an 'atrophy of disuse' during the optimum time of learning in the preschool years - thus producing a developmental lag. However, that this would be limited to the field of dyslexia seems unlikely. Let it be noted that, on the basis of general incidence, one in ten of the deprived children, as well as the mentally retarded children, would be expected to have some degree of dyslexia." (55)

**SUMMARY**

The overviews of the recent research literature concerning visual perception and the visual specific reading disability known as dyslexia have emphasized the need for early diagnosis and appropriate remediation. It has been pointed out that the child who is afflicted with learning disability may experience academic failure and psychological damage unless he is given help.
Recognition of this need to help the learning disabled children of our country has reached national proportions. Congress has enacted Public Law 94-142, commonly referred to as "mainstreaming". It mandates an individual educational plan for each child in the classroom and requires every child be placed in the "least restrictive environment" in which the child can successfully function. The intent of the bill is to place children with handicaps into a regular classroom situation as often as possible so that they are not isolated away from the "mainstream" of life by being kept in special classrooms or schools just for the handicapped.

The implications of P.L. 94-142 for the regular classroom teacher are enormous. She will need to be able to competently teach children with many varied handicaps. Among these handicaps will be the severely learning disabled. Within the normal distribution of students in her class she will have learning disabled students ranging in severity from mildly learning disabled to the more seriously learning disabled. To be able to accomplish the task of answering the needs of all of these students, she will require the proper tools.

The Visual Interpretation and Perception Program attempts to answer the classroom teacher's need for the proper tools. The V.I.P. Program is broadly divided into two sections. The Diagnostic Tests are important in
determining that a learning disability exists or is likely to develop. The Remediation Kit section of the program is designed as planned intervention to minimize the effects of the disability. It provides a systematic determination of precise educational deficits in the field of visual perception and visual-motor perception. Most traditional achievement testing is far too global. The V.I.P. Program is oriented to specific educational deficits and will answer with greater precision the question of what the child needs in the remediation area. This emphasis, of course, brings the field of learning disabilities into very close symmetry with education in general and could contribute greatly to the improvement of all educational practices.
BIBLIOGRAPHY


APPENDIX A

"ASSIGNMENT SHEET"

LEVEL I

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Battery of Tests</th>
<th>Practice Kit Sections</th>
<th>Your Sections</th>
<th>Post-Test Passed</th>
<th>Art Design Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual Motor: Tracing</td>
<td>V.M.T.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Visual Motor: Spacing</td>
<td>V.M.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Visual Motor: Reproduction</td>
<td>V.M.R.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Shape Recognition</td>
<td>S.R.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Letter Recognition</td>
<td>L.R.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Intersecting Letters</td>
<td>I.L.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Reversals</td>
<td>R.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Art Designs

To the Teacher: Put a check in each section that the Screening Tests show this student needs. Show them how to use a Plastic Cover over the Practice Cards. (See "Teacher's Instructions")
# APPENDIX B

## INDIVIDUAL "SCORING" SHEET

### LEVEL 1

<table>
<thead>
<tr>
<th>Student's Full Name</th>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TEST No.</th>
<th>Battery of Tests</th>
<th>Practical Sections</th>
<th>SCORE</th>
<th>EVALUATION</th>
<th>ASSIGNED TA KIT</th>
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<tbody>
<tr>
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<td>Visual Motor: Tracing</td>
<td>V.M.T.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Visual Motor: Spacing</td>
<td>V.M.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Visual Motor: Reproduction</td>
<td>V.M.R.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Shape Recognition</td>
<td>S.R.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5</td>
<td>Letter Recognition</td>
<td>L.R.</td>
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<tr>
<td>6</td>
<td>Intersecting Letters</td>
<td>I.L.</td>
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<td>7</td>
<td>Reversals</td>
<td>R.S.</td>
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</tr>
<tr>
<td></td>
<td>Art Designs</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

To the Teacher: Put a check in each section that the Screening Tests show this student needs. Show them how to use a Plastic Cover over the Practice Cards. (See Teacher's Instructions)


**APPENDIX C**

<table>
<thead>
<tr>
<th>TEST SCORING RATING CHART</th>
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<tbody>
<tr>
<td><strong>V. I. P. TEST NAME</strong></td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>Visual-Motor Tracing</td>
</tr>
<tr>
<td>Visual-Motor Repro.</td>
</tr>
<tr>
<td>Visual-Motor Spacing</td>
</tr>
<tr>
<td>Shape Recognition</td>
</tr>
<tr>
<td>Letter Recognition</td>
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<td>Intersecting Letters</td>
</tr>
<tr>
<td>Reversals</td>
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<td>Maze Test</td>
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<tr>
<td>Position Concept-K</td>
</tr>
<tr>
<td>Position Concept-2</td>
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<tr>
<td>Intersecting Shapes</td>
</tr>
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</table>

*Assign all Fair or Poor Ratings to KIT*
APPENDIX D

SAMPLE ART DESIGN
APPENDIX E

TEST I

Level 1  V.I.P. Program

VISUAL MOTOR-TRACING

Directions: Place pencil on dot. Follow the line quickly to the end.

A. Horizontal

→ ____________________________ →

→ ____________________________ →

→ ____________________________ →

B. Vertical

*SCORING-ALL SECTIONS: Place a check mark on lines more than 1/8 inch away, too short, or too long, or broken.

Go on to Parts C and D
APPENDIX E

TEST 3

Level 1 V.I.P. PROGRAM

VISUAL MOTOR-REPRODUCTION

Directions: With your pencil quickly draw the figures like the examples using the dots as guides.

A. Horizontal Lines  B. Vertical Lines

C. Geometric Shapes

* SCORING ON ALL SECTIONS: Place a checkmark on variations from shape, runovers or too short lines or offstarting point.
APPENDIX E

TEST 5

Kindergarten V.I.P. Program

POSITION CONCEPTS

Directions: Circle the arrows which point the way the teacher says. (Read word in box)

*SCORING: Place a check mark by incorrectly circled arrows.
APPENDIX E

TEST 4

Level 1 V.I.P. Program

SHAPE RECOGNITION

Directions: Circle the shape like the
shape in the box.

*SCORING: Place a check mark by any incorrectly
circled shape.
APPENDIX E

TEST 5

Level I V.I.P. Program

LETTER RECOGNITION IN WORDS

A. Lower Case Letters

*SCORING: Place a check mark on each error or omission.

Directions: Underline each letter like the letter in the box.

Example: jump grip got jig

A. Lower Case Letters

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h</th>
<th>i</th>
<th>j</th>
<th>k</th>
<th>l</th>
<th>m</th>
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</thead>
<tbody>
<tr>
<td>stop</td>
<td>bad</td>
<td>add</td>
<td>arm</td>
<td>noon</td>
<td>moon</td>
<td>dumb</td>
<td>tub</td>
<td>did</td>
<td>out</td>
<td>can</td>
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<td>oat</td>
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<td>did</td>
<td>bad</td>
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<td>hit</td>
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<td>man</td>
<td>ten</td>
<td>z</td>
<td>size</td>
<td>zero</td>
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</tbody>
</table>
### Appendix E

#### TEST IX

**Level 6**

**V-I-P Program**

**V-M Figure Completion**

**Directions:** Look at the A figure. Complete the B figure so it is exactly like the A figure.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td><img src="image1" alt="A Figure" /></td>
<td>B</td>
</tr>
<tr>
<td>A</td>
<td><img src="image3" alt="A Figure" /></td>
<td>B</td>
</tr>
<tr>
<td>A</td>
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<td>B</td>
</tr>
<tr>
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<td><img src="image7" alt="A Figure" /></td>
<td>B</td>
</tr>
<tr>
<td>A</td>
<td><img src="image9" alt="A Figure" /></td>
<td>B</td>
</tr>
<tr>
<td>A</td>
<td><img src="image11" alt="A Figure" /></td>
<td>B</td>
</tr>
</tbody>
</table>

* **SCORING:** Place a check mark for error or omission of a line, number, or shape.

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APPENDIX E

TEST - 6
Level I  V.I.P. Program
INTERSECTING LETTERS

A. UPPER CASE LETTERS:

DIRECTIONS: Outline with your pencil each letter you see in the box even if it is turned another way. You may want to turn your test booklet.

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |

*SCORING: Place a check mark by each error.*
APPENDIX E

TEST X

Level 16 V.I.P. Program

MAZE TESTS

Directions: Put your pencil on point A. Without lifting or erasing, draw the shortest path to Point B. You may not cross lines.

I.

*Scoring: Place a check mark by any crossed lines or by each break in the pencil line.

II.
## Appendix E

### Test 1

**Level 1**  V.I.P. Program  **Reversals**

### A. Single Letters

**Directions:** Circle all the letters like the letter in the box.

<table>
<thead>
<tr>
<th>S</th>
<th>CZGSRBSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>RBSDPEFRB</td>
</tr>
<tr>
<td>N</td>
<td>NHKMWXNHN</td>
</tr>
<tr>
<td>G</td>
<td>OCQCBGRSC</td>
</tr>
<tr>
<td>E</td>
<td>ETPBFJKFE</td>
</tr>
</tbody>
</table>

### B. Words

**Directions:** Circle all the words like the words in the box.

<table>
<thead>
<tr>
<th>ON</th>
<th>NO AN GO ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIN</td>
<td>NIT TIN INT NFT</td>
</tr>
<tr>
<td>SAT</td>
<td>SET TAS SAT TES</td>
</tr>
</tbody>
</table>

*Scoring:* Place a check mark by each error.
APPENDIX E

TEST 6

Kindergarten V.I.P. Program

INTERSECTING SHAPES

Directions: Trace over all shapes like the shape in the box.

*SCORING: Place a check mark by each error.*
APPENDIX E

TEST 1

Level 1 V.I.P. PROGRAM
VISUAL MOTOR - TRACING

Directions: Place pencil on dot. Follow the line quickly to the end.

C. Geometric

*SCORING: Place a check mark on any line more than 1/8 inch away, too long, or too short, or rounding of square corners, or breaks in lines.

D. Diagonal

*SCORING: Place a checkmark for any line more than 1/8 inch away, too long, or too short.

TEST 2 VISUAL MOTOR-SPACING

Directions: Trace over each of the X's and then make your own to the end of line.

*SCORING: Place check mark for each uneven space and wrong size.