Chapter Three
The Relationship between Language and Vision

It is through the medium of language that we collect and share knowledge and experience. What we see, hear, smell, taste, feel, experience emotionally, and think is expressed to ourselves and others through language.Basically, a person develops three language areas, which are: Receptive, Inner, and Expressive.

Receptive language is the means by which a child receives information through his sense modalities from sources outside of himself. Receptive language is used in a classroom by the child to listen, to follow directions, and to pay attention visually and auditorily.

Inner language is the means by which a child assimilates and integrates information coming from all senses. At this level of language, the child is aware of his inner reactions and feelings, draws on his background of experiences and knowledge, thinks within himself, determines a course of action, and modifies his responses to make them more effective. In short, inner language is where the child lives. Successful education requires positive stimulation of a child’s inner language.

Expressive language is the means by which a child communicates with others. The child expresses himself through verbal, written, and non-verbal means. Many times what a child expresses is influenced by the teacher’s attitude, facial expression, and vocal connotation because the child wants to give the “right” answers. Expressive language helps the teacher evaluate the effectiveness of a child’s learning.

Vision and Language

Vision and our other senses are intimately related to language. All sensory inputs are forms of receptive language. Whatever is seen, heard, smelled, tasted, or felt supplies us with information which causes a response or modification of behavior.

Assimilation and integration of data or information coming from the sense modalities takes place through inner language. Expressive language taking place through our mouth, hands, eyes, and body communicates our response. Inner language instantaneously monitors our receptive and expressive functions to determine their effectiveness and alters their performance if, and when necessary. This process of monitoring function and causing alteration in performance for improved functioning is known as “feedback.”

The processes to gain, use, and express information are learned functions and become automatic. We can direct our attention to a specific area of interest, but when we attempt to control the process of reception, assimilation, and expression we reduce efficiency and create tension. Forcing yourself to see, hear, think, write and speak creates tension and these processes do not work as effectively as when they function automatically. All systems—vision, motor, and language—must function automatically and free of tension for maximum effectiveness in the learning process.

Forcing a child to read or write before he has developed adequate skills to allow these functions to become habitual will cause him to alter himself in an adverse way. Changes in the total child occur because tension created in one area of performance has an adverse affect on other areas of performance. This concept is supported by Kurt Goldstein in his book, The Organism, and was succinctly expressed by V. I. Shipman, PhD, in a paper read in 1955 before the Eastern Psychological Association, as follows:
Under stress there is a constriction of all of the perceptual field and the child observes less, sees less, remembers less, learns less, and becomes generally less efficient.

Expressed in another way, difficulty in assimilating or integrating information (inner language) adversely affects receptor and expressive mechanisms; difficulty in reception adversely affects inner and expressive mechanisms; difficulty in expression adversely affects receptive and inner mechanisms.

A further breakdown of the changes that occur as the result of inadequate functioning are described as follows:

Receptive language difficulties – inadequate reception of visual or auditory information is manifested by problems in the following areas:

1. Vision
   a. Binocular vision – fusion, depth perception, teaming of the eyes.
   b. Refractive errors – myopia, hyperopia, astigmatism, anisometropia.
   c. Peripheral vision – closing out peripheral awareness.
   d. Focusing – decreased flexibility.

2. Motor
   a. Eye movements – fixations and pursuits.
   b. Posture – head tilt, slouching, one shoulder more forward than the other, one hip more forward than the other, one leg functionally longer than the other.
   c. Squinting or narrowing of palpebral fissure – squinting eyes.
   e. Facial grimaces – face reflects body tension.

3. Language
   a. Attention span – not being able to stay with a near task.
   b. Comprehension – decrease in understanding and retention.
   c. Auditory reception – less information heard in a given unit of time.

Inner Language difficulties – inadequate assimilation and integration of visual or auditory information is manifested by problems in the following areas:

1. Vision
   a. Binocular vision – deterioration.
   b. Refractive errors – progressive increase, i.e., progressive myopia.
   c. Peripheral vision – closing out or narrowing peripheral awareness.
   d. Focusing – more than necessary.

2. Motor
   a. Posture – adverse changes and body tension.
   c. Facial grimaces – face reflects tension.

3. Language
   a. Attention span – hard to sustain unless a product of restriction.
   b. Comprehension – decrease in understanding and retention.
   c. Auditory reception – hears less.

Expressive Language difficulties – inadequate expression of visual or auditory information is manifested by problems in the following areas:

1. Vision
   a. Binocular vision – deterioration.
   b. Focusing – more than necessary.
   c. Peripheral vision – closing out or narrowing peripheral awareness.
   d. Avoids looking at person while talking.
2. Motor
   a. Writing
      (1) Labored
      (2) Posture – asymmetrical
      (3) Pen or pencil held improperly
      (4) Fingers used to form letters
      (5) Body tension
      (6) Restricted movements
      (7) Body awareness – loss of awareness of self
   b. Speaking
      (1) Facial tension
      (2) Body tension
      (3) Body awareness – loss of awareness of self

3. Language
   a. Expressive – child either talks minimally, in short bursts, or very rapidly.
   b. Inner – becomes confused.
   c. Receptive – must go slower.

The child has another alternative when he has difficulty meeting the needs of a classroom. He can withdraw from the task. Withdrawing from the task keeps the child from developing adverse ocular and postural manifestations. He will just not perform.

Vision, language, and motor functions must work together to enhance the performance of the child. Just as problems in language affect vision and motor functions, problems in vision and motor functions affect language. One function affects the other either for support or to its detriment.

The bulk of the work in a learning situation is triggered by radiant energy which means that vision starts the process. Difficulty in processing information through reception, assimilation and integration, or expression can cause changes to take place in visual and body mechanisms. Changes can occur in vision as a result of difficulty in hearing, speaking, or writing when there is difficulty through the receptive, inner, or expressive mechanisms or in the motor systems of the body. These alterations can take place at any time in the life span of an individual.

Examples of refractive problems increasing with age are seen by all optometrists. In looking at the history of these people it is seen that they are either continuing their education, more involved academically at their job, involved in a training program at their job, or doing more sustained close work. The common factor among them is that they are all involved in areas of performance which place greater demands than they can easily meet in the assimilation and integration of information.

Changes in the visual mechanism occur as a product of restriction in all areas of body performance in an attempt to enable the person to assimilate and integrate information and data. In other words, in order to maintain a level of performance satisfactory to his teachers and to meet the standards of the school, the student closes out the world around him, restricts his body movement, and constrits his language function. (Some people have constricted themselves to the degree that when they look at something or listen to someone talk, they lose awareness not only of their surroundings but of their own body as well. When they become aware of their body, they find it difficult to see and listen.) At first the changes are momentary and the student releases back to where he started. As time goes on, this restricted functioning becomes so much a part of him that his body posture and ocular mechanisms change in an attempt to relieve tension. The new release posture for vision and body becomes the altered posture. As the person continues in the learning or work task, the new physical and visual status becomes his base line and the process of visual and physical deterioration continues. This process will continue until the student functions at a level of comparative ease. This happens when one of the following conditions is met:

Eyes OK I'm OK
• He stops being a student.
• His level of performance is equal to or falls below his ability to receive, assimilate and integrate, and express information.

Many guidelines for the classroom teacher can be drawn from the preceding discussion. The chapter on communication discusses ways of helping children in the areas of language. The chapters dealing with posture and training activities supply the means of helping a child develop freedom in movement and visual performance. The additional step of proper optometric care for the student would complete the picture of maximum preparation of a child for the learning situation.