Visual Perception

People are visually oriented beings. Knowledge of our environment is mainly garnered through visually deciphering forms and symbols that convey meanings. As with hearing, the quality of eyesight is not always a factor in a person's ability to *interpret* what is seen. Children with no sight impairment (i.e., 20/20 vision) can fail to develop visual perception skills that are necessary for learning in general and that are particularly crucial for learning how to read and write. Just as there is a difference between *hearing* and *listening* in auditory perception, so also there is a difference between *looking* and *seeing* in visual perception.

Visual perception is training in seeing and interpreting visual stimuli. Efficient visual functioning normally takes some time to develop, hence the use of oversized and brightly colored visual materials in primary level classrooms. Although the majority of children successfully develop the ability to focus visually and to make fine discriminations in visual materials during the primary years, some will be well into the intermediate grades before these skills are adequately developed for visual learning tasks. Often these children will need special help.

Children who are inefficiently processing visual stimuli may have *some* of the following difficulties.

The inability to

- Get meaning from visual clues
- Focus on a stationary object
- Discriminate characteristic differences in visual stimuli (i.e., color, shape, size/quantity, direction/distance)
- Perceive individual parts as constituting a whole
- Judge distance
- Relate symbol to object
- Separate foreground from background in a picture
- Recognize and remember visual information
- Track a moving object with the eyes
- Reproduce simple visual patterns
- Recognize familiar visual images when reduced or embellished
- Direct an extremity to a specific target

Perceiving the visual environment in a meaningful way includes visually recognizing objects, people, and gestures. The ability to analyze and synthesize what is seen is also important. For example, visual analysis is necessary in reading the facial expressions of others. A deficiency in this area could contribute to social problems that are experienced by some children. Closely related to visual analysis is figure-ground discrimination (the ability to visually select relevant stimuli from background material). A problem in this area is manifested in reading music by dysfluency, skipping notes or lines in the music, and frequently losing one's place. Individuals with this problem usually read note by note because they are unable to perceive notes in groups. The same problems are evident in reading words, but the music page is visually more

complex. There are many symbols to contend with and, therefore, many more distractions. Symbols are placed on a staff, making figure-ground discrimination critical. Sometimes music books, especially instrumental method books, have several exercises on one page, making it more difficult to focus on a specific line, measure, or note. *Visual tracking* is following movement with the eyes without turning the head. The music ensemble (e.g., chorus, band, orchestra) is a situation where the ability to shift eyes from music to conductor frequently is required. In action songs, movements must be confined close to the leader's body if head movements are to be discouraged. *Visual sequencing* is similar to auditory sequencing in that it involves the correct ordering of sensory stimuli. In visual activities, the emphasis is usually on left-to-right eye movements to establish that pattern for reading and writing.

Music activities that require coordination of the eyes with the hands (or feet) may be created with rhythm instruments, movement to music, and dance. The ability to direct an extremity to either a stationary or moving target is a precise visual motor skill called *eye-hand coordination.* These activities include those using any manipulative objects such as instruments, balls, hoops, and scarves. The larger the target, the more gross the movement directed toward it. Activities should progress from large target areas to small ones requiring fine motor skills. Instruments and objects that offer relatively easy eye-hand tasks are large drums and cymbals (struck with large beaters), large balls, and hoops. The most challenging tasks are found in accurately playing the triangle, finger cymbals, Autoharp, thumb piano, resonator bells, and keyboard instruments.

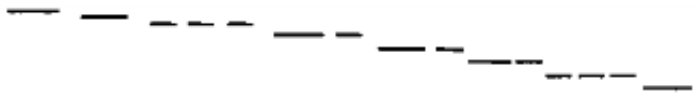
Visual Discrimination

Characteristic differences in visual stimuli include color, shape, size, quantity, direction, and distance.

Color Many children come to school with the ability to discriminate the primary colors (red, yellow, blue) as well as green, black, and white. For children already secure in these, blends and shades can be introduced. Although color discrimination is not usually considered important to visual tasks such as reading and writing, some psychologists are now suggesting that color blindness (lack of color *perception)* may be more common in children than previously thought. If this is true, teachers should use colored paper and inks with greater discrimination. In music class, we often observe that primary level children have difficulty in making a visual transfer. White on black has now been reversed to black on white. In teaching music symbols, this is frequently noticed when children confuse quarter notes (♩), which appear white when filled in on the chalkboard, with half notes(𝅗𝅥) in their books. Wherever visual problems of this nature are suspected, it is wise to make every effort to keep materials as visually consistent as possible (e.g., white background feltboards, posters, black ink on white paper).

Shape The basic shapes of triangle, circle, and square are usually introduced first. Diagonal lines and shapes consisting of both curved and straight lines are more difficult to perceive. Recognition of shape is an obvious prerequisite to letter and number recognition, and hence reading and writing both music and words.

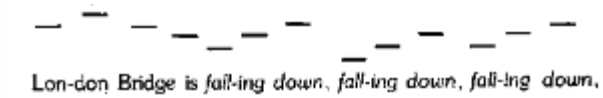
Direction The ability to discriminate up/down, over/under, right/left, and so forth, in visual stimuli involves spatial orientation. Again, the importance of being able to recognize direction in visual materials is particularly evident in reading and writing skills. In selecting music materials, it is important to make certain that spatial concepts are consistent. Reading or singing songs in which words and melody are spatially opposing can be very confusing to a child who lacks competence in these skills. The following example represents an accurate directional match of words and melody.



Down, down! Yel-low and brown The leaves *are fall-ing* o-ver the *town.*

From POEMS FOR CHILDREN by Eleanor Farjeon. Copyright 1925, 1954 by Eleanor Farjeon. Reprinted by permission of Harold Ober Associates and J. B. Lippincott Company.

An example of opposing spatial direction is found in the following.



Lon-don Bridge is *fall-ing down, fall-ing down, fall-ing down,*

Size/quantity Both size and quantity are relative concepts. They are part of a generalization again involvement spatial reasoning. Both are important in learning to read words and music as well as in writing skills. Some of these concepts are big/little, fat/thin, long/short, tall/short, more/less, and many/few.

Distance Judging distance is more important in music reading than in reading words. Again, spatial relations are crucial in the ability to analyze the distance between lines and spaces, notes on, below, or above the staff, and so forth. The fluent music reader makes these judgments instantaneously and accurately.

As in auditory discrimination tasks, a few general goals can effectively lead to the development of discrimination skills in visual stimuli. Each characteristic is first perceived and labeled, applied in music performance of some kind, and finally utilized creatively in music activities.

Tactile Discrimination

Because concrete and manipulative materials are often necessary for children lacking the most basic visual skills, tactile experiences will be included in this section. Making a visual activity tactile is often necessary for children with impaired sight. Children with sight will generally progress from concrete

materials to illustrations and pictures. Some visuals can be made tactile by covering with glue and spreading with textured materials such as salt, sand, grains, or stone chips. Line drawings and pictures can be outlined with yearn, twine, cord, or a silicone adhesive for a raised effect. Cutouts can be made from sandpaper, corrugated cardboard, fabric, and so forth. Materials that can provide a variety of textures should be used. Tactile characteristics to consider are sticky, soft, hard, coarse, rough, smooth, patterned, and spongy. Raw materials could include wood, tile, glass, Lucite, rubber, plastic, vinyl, sandpaper, tape, cotton, Styrofoam, sponge, and fabrics such as velvet, corduroy, satin, silk, chiffon, and coarse tweed. Raised impressions of paper and pencil activities can be made by placing the paper on top of a piece of window screening with a cardboard backing.

Music activities often demand visual skills combined with motor responses of some kind. Visual motor skills are required to successfully play instruments, engage in body movement activities, read and write music scores, and follow a conductor. Other activities such as card and table games require the visual skills of matching, sorting, memory and sequencing. Similar activities are often used in individual learning center stations to aid in securing music symbolization and terminology. Similar individual activities can provide valid experiences in visual motor skills. However, one should be cautioned that they are seldom effective in achieving music concepts *without auditory reinforcement of those concepts.* In other words, the goals of paper and pencil activities should be to relate sound and symbol. Stores and catalogues that supply educational materials abound with visual aids that can be used by the skillful teacher to good advantage without losing sight of the music goals.

Although many of the following activities include other perceptual motor skills that may be more obvious, one is reminded that they are presented here as good examples of music experiences in which visual perception *could* be a learning skill focus.

To summarize, visual perception skills are important in many learning tasks, especially those requiring reading and writing. Specific skills include awareness, tracking, figure-ground separation, eye-hand coordination, memory and sequencing, as well as the ability to discriminate the characteristics of color, shape, size, quantity, distance, and direction. Some children lack these skills to such an extent that substitution or pairing of a tactile stimulus may be necessary. Since music is basically an aural art, music concepts cannot effectively be taught through this mode unless continually reinforced with the related sound.