Overview

Students with low vision have unique learning needs; that is, each student has his or her own needs. This course explores various topics related to school-age children with low vision and the U.S. educational system. The many adaptations and strategies presented in this course can help these students develop skills and learn. The information is for parents, classroom teachers, paraeducators, and medical professionals such as family doctors and optometrists who work with children with low vision. Although this course is U.S.-based, the information is helpful for everyone. The goal of this course is to present information that specifically helps students with low vision to be successful in school.

The course consists of seven lessons, beginning with Lesson 1’s question, “What is low vision?”. Lesson 2 explores the common causes of low vision in children, such as cortical visual impairment and retinopathy of prematurity. Lesson 3 describes what to expect in typical vision assessments. Lesson 4 identifies
environmental and material accommodations that can be used to ensure the student with low vision is comfortable and able to access learning material. Lesson 5 discusses various low vision devices such as magnifiers and monoculars, and assistive technology such as CCTVs, as well as how to motivate students to use them. Lesson 6 explores the psychosocial aspects of low vision, such as how students feel about their condition and how adults working with these students can provide support. Finally, Lesson 7 outlines the significance of the Expanded Core Curriculum (ECC) and a student’s Individualized Education Plan (IEP).

Some lessons include videos to enhance the learning material. The Resources supplement offers links to relevant articles and information for your own further research and enrichment.

Each lesson includes section reviews, which are for your personal development only. Complete the section reviews before going on to a new section of the course. Students who routinely do the section reviews perform significantly better on assignments. Do not send your responses to your Hadley instructor. Rather,
check your comprehension by comparing your answers with those provided.

To complete the course, you are required to submit seven assignments, one at the end of each lesson. These assignments enable your instructor to measure your understanding of the material presented in the lessons. Refer to the Getting Started instructions for information about submitting assignments.

The Hadley School for the Blind wishes to express appreciation to Sharon Zell Sacks, Ph.D., and Francey Liefert, low vision specialist, of the California School for the Blind, who wrote the original version of this course for Utah State University.

If you are ready to begin learning about the school-age student with low vision, begin Lesson 1: What Is Low Vision?
Defining *low vision* is not simple. Teachers, family members, medical professionals, and even the child with low vision can find the concept confusing and frustrating. A useful definition of low vision clarifies how having low vision differs from being sighted or being blind. It also clarifies how children with low vision are not all alike.

This lesson first explores perceptions and definitions regarding low vision. Then it describes Corn's model of visual functioning to show the many factors that affect how a person sees. It will become clear that each child with low vision is unique. Familiarizing yourself with this information will help you determine what your child or student needs to be successful in school.

**Objectives**

After completing this lesson, you will be able to
a. discuss perceptions and definitions related to low vision
b. explain the factors involved with functional vision, according to Corn's model
Perceptions and Definitions

Low vision is easily misunderstood. Many sighted people do not realize a person can have a visual condition that is neither full sightedness nor full blindness. It is often difficult for them to realize that corrective lenses such as glasses and contact lenses do not restore full sight to those with low vision. This section identifies common misconceptions, explains why families might struggle to understand low vision, defines terms associated with low vision, and establishes a working definition of low vision for this course.

Misconceptions of Low Vision

Sighted people may think they can easily tell apart those who are sighted and those who are blind. In fact, many people commonly think there are only two categories of visual functioning: sighted or blind. The category of sighted people, of course, includes those who have full sight with the help of glasses or contact lenses.
When a person with low vision appears to have sight, people often expect that person to function as a sighted person. Common **misconceptions** include:

- If a person can't see well, glasses or contact lenses should restore full vision.
- If a person is wearing glasses, it does not make sense that he or she still needs to get up close to view an object, read text, or view signs on a board.
- If a person has vision, he or she should not need help with reading signs or menus.
- If a child is wearing glasses, why is he or she using braille to accomplish tasks?
Likewise, other common misconceptions lead to the treatment of a person with low vision as someone who is blind. For example:

- If a person is using a long white cane, guide dog, or braille, that person must be fully blind.
- If a person makes little eye contact or has wandering eye movements, that person must be blind.
- If a person is labeled as "legally blind," that person must be fully blind.

All of the preceding perceptions are NOT accurate, of course. Visual impairments come in many varieties. Some individuals may have just enough vision to recognize faces and distinguish many environmental cues, even though their eyes wander. Others may have enough vision to see things up close, but need assistive devices and aids to travel around. Still others may use glasses but not have full vision. In fact, some children with low vision may take off their glasses because they do not seem to help anyway. Consider the following case study about Susan, who has low vision and is misunderstood by her peers.
Meet Susan

Susan is 10 years old and was born with an eye condition that affected her vision. She holds textbook material 2 inches from her face in class. Often she uses a magnifying glass or eyeglasses to enlarge reading material. Susan cannot read the whiteboard in class unless she is about 3 feet from the board and a dark marker is used. Susan locates her friends on the playground at recess by remembering the color of their clothing and their body shape.

Many of Susan's friends cannot figure out why she has trouble seeing from a distance. They think she is sighted; after all, Susan seems to locate her friends on the playground easily.

Notice how Susan's friends are confused about Susan's vision. Because she appears to be able to see, they expect her to see as a fully sighted person. This case study is an example of how low vision may come in many varieties and is easily misunderstood.
A first step to understanding low vision is to realize that having low vision is different from being fully sighted and from being fully blind.

**Diagnosis of Low Vision**

Families, too, may first think about the diagnosis of low vision in terms of either sightedness or blindness. Culture and values can play a large role in how families perceive low vision. In fact, some parents may consider the low vision as a punishment, a curse, or God's will. Reactions range from overprotectiveness to indifference. The following are two common attitudes families may have; neither helps the child:

- The family believes the child with low vision cannot independently perform daily tasks. The family feels they need to specially care for the child, at the expense of fostering independence and self-reliance.
- The child with low vision appears sighted and seems to function visually, so the child is expected to perform visual tasks with few or no adaptations. Families may become angry with the child when he or she appears to see one thing but not another.
Understandably, families of children with low vision often have difficulty defining their child's low vision. Many infants and young children with low vision are initially diagnosed as blind because they appear to function as if they are blind:

- They may not react typically to visual stimuli such as toys or mobiles.
- They may not be able to look at family members without verbal and tactile cues.
- They may be unwilling to explore or move around their environment without prompting from others.

Further complicating the issue, some medical professionals often identify children with low vision at birth as legally blind. Upon hearing this label, families might focus only on the word blind. The term legally blind needs to be explained, or families may not realize that the term indicates qualification for certain services, but not the actual visual ability of the child. This term will be further explained later in this lesson.

In addition, some medical professionals tell these families that their child would be best served by a school for the blind rather than by a local school.
program. Again, hearing the word *blind* can further emphasize the false idea that the child cannot see. If the child's actual visual ability is not clarified, the misconception can carry forward even to the point where the child may come to think he or she is actually blind.

Even after coming to terms with a diagnosis of low vision, families often find it hard to understand how their child can see or function when performing visual tasks. The families may have many questions, such as:

- How does my child see?
- What adaptations and accommodations need to be made to help my child see better?
- How will my child's vision change in the future? Will my child eventually become completely blind?

These important questions form the starting point for understanding a child's low vision. The answers to these questions will vary from child to child. No two children with low vision see alike; two children can function very differently even with the same eye condition.
Terminology Related to Low Vision

Familiarity with a few terms commonly associated with low vision is helpful. Keep in mind, however, that these terms are defined differently from country to country. This course focuses on definitions used in the United States.

Parents often hear the term *legally blind* when their child is first diagnosed with low vision. This term designates whether a person qualifies for certain services and equipment, and can affect privileges such as driving. Legal blindness does NOT measure how a person actually sees, because it takes into account only visual acuity and visual field.

Individuals who are *legally blind* have been clinically diagnosed with:

- a visual acuity of 20/200 or less with best correction in the better eye
- a visual field that is no greater than 20 degrees in the better eye

OR
**Visual acuity** measures how well a person can see distances. Individuals who are fully sighted have a visual acuity of 20/20. Therefore, the visual acuity of 20/200 for a person who is legally blind means the person must be 20 feet or closer to an object to recognize the details that a person who is fully sighted can see from 200 feet away.

**Visual field** refers to the amount of space a person can see in front and at the sides while looking straight ahead. The normal entire visual field is about 180 degrees from side to side, as shown in the diagram, and 60 degrees up and down. The visual fields of each eye normally overlap about 60 degrees, creating a single field of vision known as binocular vision. A visual field of 20 degrees in the better eye, therefore, is very narrow.
The term **legally partially sighted** refers to individuals who have a visual acuity between 20/70 and 20/200. This designation is another term used to qualify a child for services and equipment in school.

In school settings, students with visual impairments qualify for specialized services based on how their vision impacts their learning. Parents may encounter the terms **functionally blind** and **functionally low vision**:  
- Students who are **functionally blind** may use auditory and tactile modes, such as braille, for most of their learning needs. These individuals may need audio versions of novels or instruction in braille reading and writing for their learning needs.
Students who are **functionally low vision** use a combination of visual, auditory, and tactile modes to acquire information. That is, a student who is functionally low vision may use large print, audio, and braille for school assignments.

Consider the following case study about Jonathan who is functionally low vision.

**Meet Jonathan**

Jonathan is 14 and in eighth grade. During daylight hours, he has good visual acuity for reading books and viewing printed materials at a distance. But his visual field, or the amount of area he can see, is limited. If he is unfamiliar with the layout of a room or a school route, he may bump into obstacles or people. Although Jonathan reads print well, he is learning braille because his visual impairment is progressive. It is anticipated that he will lose more visual field over time.

Did you notice Jonathan can read and view printed materials at a distance? This means he has usable visual acuity, but has problems with the amount of area.
he can see. His visual field is limited. Because Jonathan is functionally low vision, he uses a combination of print and braille to get his information.

The terms *legally blind*, *legally partially sighted*, *functionally blind*, and *functionally low vision* are useful for gaining services for children with low vision. But it is important to remember these terms do not define exactly how the child with low vision sees.

It is also helpful to clarify the terms *visual function* and *visual efficiency*. Both terms have different meanings: a medical meaning, and an educational and rehabilitational meaning:

- **Visual function** in an educational and rehabilitational setting refers to a person's ability to do a visual task, such as fixate on an object or track a moving object.
- **Visual function** in a medical setting refers to the functions of the eye that can be measured, such as acuity and visual field.
- **Visual efficiency** in an educational and rehabilitational setting refers to how well a person with low vision uses his or her functional vision.
• **Visual efficiency** in a medical setting refers to having no limitations on visual ability.

This course uses these terms according to their definitions in the educational and rehabilitational settings.

**Definition of Low Vision**

Low vision is not simply a clear-cut clinical diagnosis. Many factors affect how a child with low vision actually sees and is able to best use his or her vision. In fact, low vision is often defined differently from context to context. This lesson, however, presents a helpful working definition of low vision by Anne Corn and the late Alan Koenig. They describe a person with low vision as:

A person who has difficulty accomplishing visual tasks, even with prescribed corrective lenses, but who can enhance his or her ability to accomplish these tasks with the use of compensatory visual strategies, low vision and other devices, and environmental modifications.
This definition provides a positive approach to helping children with low vision succeed. It recognizes that these children are neither fully sighted nor fully blind, and that corrective lenses do not restore full sight. It allows for differences in how people with low vision use their vision. Furthermore, it focuses on finding ways to maximize a person's visual ability.

**Section Review**

Select the best item to answer each of the following questions.

1. Which of the following does NOT necessarily restore full sight to those with low vision?
   a. glasses
   b. contact lenses
   c. both (a) and (b)

   The correct answer is (c). Both glasses and contact lenses do not restore full sight to those with low vision.
2. Which of the following is TRUE about children with low vision?
   a. All children with low vision can easily recognize faces.
   b. Some children may remove their glasses, finding them not helpful.
   c. Children with low vision do not need travel aids.

   The correct answer is (b). It is true that some children with low vision take off their glasses, finding them not helpful, or may use glasses and still not have full vision.

3. Which of the following factors can play a role in how families perceive a diagnosis of low vision?
   a. family culture and values
   b. family location
   c. family size

   The correct answer is (a). Family culture and values can play a role in how families perceive a diagnosis of low vision.
4. Families coming to terms with a diagnosis of low vision may have questions about which of the following?
   a. how their child's vision will change in the future
   b. what adaptation needs to be made to help their child see better
   c. both (a) and (b)

The correct answer is (c). Families coming to terms with a diagnosis of low vision ask:
- How does my child see?
- What adaptations and accommodations need to be made to help my child see better?
- How will my child's vision change in the future? Will my child eventually become completely blind?
5. Which of the following is TRUE about defining low vision?
   a. No two children with low vision see exactly alike.
   b. The terms *legally blind* and *functionally blind* define low vision.
   c. Low vision is defined through a clear-cut clinical diagnosis.

   The correct answer is (a). Children with low vision are a varied group. No two children with low vision see alike. They may function differently even when eye conditions are the same.

6. The definition of legal blindness involves which of the following factors?
   a. a visual acuity of 20/200 or less with best correction in the better eye
   b. a visual field no greater than 20 degrees in the better eye
   c. either (a) or (b)

   The correct answer is (c). Individuals clinically diagnosed as legally blind have either a visual acuity of 20/200 or less with best correction in the
better eye or a visual field no greater than 20 degrees in the better eye.

7. The definition of low vision from Anne Corn and Alan Koenig is very helpful because of which of the following?
   a. The nature of low vision differs from child to child.
   b. It focuses on finding ways to maximize a person's visual ability.
   c. both (a) and (b)

   The correct answer is (c). The definition of low vision from Anne Corn and Alan Koenig is very helpful because the nature of low vision differs from child to child and the definition focuses on finding ways to maximize a person's visual ability.

This section discussed some important misconceptions and perceptions about children with low vision. It also defined common terms associated with low vision and provided a helpful definition of low vision. The next section will explore the various factors that affect how a child with low vision uses his or her vision.
Factors That Contribute to Low Vision

As the previous section described, children with low vision are indeed a varied group. This section identifies some general factors that can affect vision. Then it presents the model of visual functioning created by Dr. Anne Corn. The model organizes the factors that affect visual functioning.

General Factors That Affect Vision

Recognizing that children with low vision are unique in how they see and what they are able to do becomes key in understanding low vision. The gray area between full sightedness and full blindness is referred to as the "neither fish-nor-fowl" phenomenon. The term is further explored in a later lesson. This gray area, however, can lead to much confusion for everyone about what the child is able to see and visually do. For example, a child with low vision may:

- need help reading certain text in certain conditions, even if he or she wears glasses and appears sighted

BUT
Children often have different visual abilities even when eye conditions are the same. For example, one child with a particular eye condition may be able to read print easily and efficiently. But another child with the same visual condition may need to use both braille and print for reading, depending on the assignment, the time of day, and the child's adaptability.

Therefore, it is very important to recognize the different factors that affect the visual function, or visual abilities, of children with low vision. Some general
factors that affect how a child with low vision can see include the child's:

- physical environment for daily activities
- onset of the visual impairment, that is, whether it occurred at birth or later
- amount of vision
- individual abilities
- individual makeup
- psychological well-being
- level of independence

In the following case study, Juan and Mike have the same visual diagnosis but use their vision differently.

**Meet Juan and Mike**

Juan and Mike are in upper elementary school and have cataracts, which have greatly reduced their visual acuity. Juan uses his functional vision to complete his schoolwork and participate in sports such as swimming. He travels and does many daily living tasks independently. His visual impairment is not easily noticed.
Mike, despite being intelligent, depends on his siblings for help with schoolwork and daily living tasks. He seeks to be excused from certain physical activities and does not try to use his vision to accomplish things on his own.

Did you notice how, despite their same eye condition, these two boys have very different visual functioning? Their individual abilities, makeup, psychological well-being, and level of independence were significant factors in what they could or could not accomplish with their vision.

**Corn's Model of Visual Functioning**

Dr. Anne Corn designed a model of visual functioning that organizes and explains the various factors involved with functional vision. According to this model, the factors fall into three main categories:

- environmental cues
- visual abilities
- stored and available individuality

The model also shows how these three categories influence each other. A factor of each category must
be present for a child to be able to use functional vision. Knowledge of which factors affect a student's vision helps determine which low-vision accommodations the child will benefit most from. Lesson 3 will explain how eye specialists assess children with low vision for the various factors described here.

**Environmental Cues**

The first category is environmental cues, which provide information about a person's surroundings. Environmental cues include color, contrast, illumination, time, and space.

**Color** has three attributes: hue, brightness, and saturation. Hue refers to the names of the specific colors of the light spectrum, such as red, blue, and yellow. Brightness is the intensity of color on a particular surface as compared to surrounding surfaces. Saturation refers to the differences in intensity of a particular color.

**Contrast** includes intensity, tone, and color. Examples of high contrast include white background with black
lettering for reading, and a dark surface with white or yellow lines for outdoor games. High contrast tends to be much more useful for many children with low vision than materials presented with little or no contrast. For example, the picture shows an example of poor contrast on the left: a white cereal bowl with light-colored hot cereal inside. On the right is an example of good contrast: a dark-colored bowl with light-colored cold cereal inside.

In the following case study, Brittanie has difficulty with light-colored items on light-colored backgrounds.
Meet Brittanie

Brittanie is 8 years old and in the second grade. She has low vision and exhibits physical disabilities. Every day at school, Brittanie's class prepares lunch. When it's time for Brittanie to use her utensils to eat, she has difficulty finding them. The fork, spoon, and knife are white and are located inside a white drawer. To find these utensils, she needs to use her tactile skills.

Brittanie would benefit from higher contrast, such as a dark-colored drawer liner or dark-colored utensils against the whiteness of the drawer.

Illumination involves intensity, how objects reflect, the distance of light sources, and the type of light source. Illumination concerns the amount of light from a light source affecting the objects of vision. Very intense light, such as in a bright, sunny environment, produces a high degree of illumination. This may help some children when reading or traveling. But very bright light can illuminate too much, producing reflections, shadows, and glare. Glare can impact a student's
ability to read, locate friends, or move safely. Reflected shadows from trees, buildings, and other objects can make it difficult for children to go down stairs or travel on uneven surfaces. Some children also have photophobia, which is an extreme sensitivity to light.

The **time** factor of environmental cues involves the frequency, duration, speed, and distance of a visual object or presentation. Moving objects or presentations involving movement may be more challenging to perceive. The appearance and disappearance of objects or presentations may also be an issue. The distance of the moving object or presentation is another aspect affecting vision.

The factor of **space** includes aspects such as outline, size, complexity, pattern, and clutter. It can be difficult for a child with low vision to recognize where objects are in the surrounding space and how they are positioned in relation to other objects and to the child. Many children with low vision have trouble with depth perception and may appear clumsy or unsure of themselves in unfamiliar environments. For example, certain patterns in carpeting or tiles may cause the
surface to look flat to a child when in fact there is a slope or stairs.

**Visual Abilities**

The second category is visual abilities. Usually an ophthalmologist assesses a child's visual abilities, which include etiology, acuity, visual field, motility, color and light perception, and brain function.

The condition causing the low vision is the **etiology**. The word *etiology* comes from the Greek word *aitia*, which means "cause." Common etiologies for children with low vision are cortical visual impairment and retinopathy of prematurity. Other etiologies include albinism, eye malformations, and eye accidents. Lesson 2 will further describe the most common etiologies of low vision.

How well a child sees from near and far without glasses is the student's **acuity**. An optometrist usually assesses acuity during a vision exam. Acuity includes near vision, midpoint vision, and distance vision.

How much of the visual area a child can see is the student's **visual field**. This includes a person's
peripheral vision, or what a person can see "out of the corner of the eye."

How the eye moves is referred to as motility. This factor includes:

- how the eyes can fixate on objects and track them in an even fashion
- whether each eye functions independently, which is monocular vision, or both eyes function together, which is binocular vision
- different levels of nystagmus, which is rapid or pendulum-like eye movements that, when uncontrolled, make it difficult for some children to focus on a visual task for a long time
- the crowding effect, which is when a visual object is surrounded by other visual objects that distract the vision and often makes it difficult for some children to read regular print for long periods of time

Some eye conditions may affect children's color receptors or light receptors. For example, children with retinal diseases may have difficulty telling dark colors like black, blue, or brown apart. Children with albinism
or aniridia are sensitive to bright light because their photoreceptors are unable to control the amount of light that is passing through the eye.

**Brain functions** play an essential role in functional vision. As many as 50 percent of children with low vision have additional disabilities. These children likely have a diagnosed eye condition affecting the eye itself. The brain is involved with fixation, awareness of motion, and changes in the shape of the lens. In addition, visual impairment is affected by the brain's ability to

- process information from the eye
- interpret visual information
- coordinate visual functions with body movement and hearing

For example, many children with cerebral palsy may have good visual acuity, but cannot visually process what they see in a timely manner. So it may take several minutes for a child to respond to a visual cue, such as being given a choice between two snack options and pointing to the desired snack.
Stored and Available Individuality

The third category of Corn's model is stored and available individuality. A number of factors refer to a student's past experiences and abilities that the child may apply to new situations or use for situations involving creativity. These are categorized as stored and available individuality and include the following: cognition, sensory development and integration, perception skills, psychological makeup, and physical makeup.

A student's intellectual capability is known as cognition. Children may have cognitive deficits that get in the way of problem solving or responding quickly to visual tasks. Following each step of a set of directions can be challenging, even if the child can hear the directions clearly, because of the way the brain interprets directions. Memory is also a part of cognition.

Sensory development and integration involve hearing, touch, taste, and smell. Children with low vision may show difficulty with visual processing, and some with auditory processing as well. Therefore, they may use
their other senses to learn about their surroundings. For example, a young child with low vision may put an object in his or her mouth before using vision.

**Perception skills** include awareness, recognition, and identification. Some children with low vision may be able to view an object or to perform visual tasks, but lack perceptual ability. Examples of perception skills include recognizing:

- relations of part to whole, such as when putting puzzle pieces together to make a picture
- relations of figure and ground, or being able to tell the difference between the object and the background
- closure, or perceiving a complete image when given only part of it (e.g., perceiving the circle shape when looking at objects arranged in a circle)
- sequence, such as putting items in order from smallest to largest

**Psychological makeup** includes emotional stability; motivation; attention; self-esteem; identity as sighted, low vision, or blind; and sociability. Children may:
- feel uncomfortable about their visual impairment
- recognize that they have visual limitations, but not view themselves as blind
- be perceived as sighted by their families, teachers, and peers

The marginal status of being neither blind nor sighted may hinder a student's self-confidence or willingness to engage comfortably with others.

**Physical makeup** includes motor development, muscle tone, stamina, endurance, reaction time, and general health. For example, children may have motor issues that prevent them from moving safely or easily within the environment. The following are examples of how physical makeup can affect visual ability. Stamina is
affecting vision when children with physical impairments and low vision show a lot of fatigue when trying to complete a class assignment. General health is a factor when children with a visual field loss or uncontrolled nystagmus find it very tiring to locate friends on the playground or to travel independently in unfamiliar places in the community.

Now meet Mario, who has low vision and additional disabilities from birth. He has issues regarding stored and available individuality.

**Meet Mario**

Mario was born prematurely at 7 months. As a result of complications during his birth, Mario has some visual field loss and additional disabilities. Completing schoolwork is difficult for him because of how he processes auditory information. For instance, his brain interprets directions in a manner that prevents him from responding quickly when a teacher gives him multiple directions to follow. Also, he has trouble writing neatly and often skips words when copying assignments.
In addition, Mario has problems with his physical reaction time. So he has periods of awkwardness where he bumps into furniture while walking.

In this case study, Mario displays problems with cognition, sensory development and integration, and physical makeup as a result of his disabilities.

**Overlapping of Categories**

The aspects of the three categories can be interrelated. For example, under visual abilities, the factor of acuity includes near vision, midpoint vision, and distance. Distance refers to a person's visual ability at various distances from the object being viewed. Under environmental cues, the factor of time includes frequency, speed, duration, and distance, too. In other words, one would consider how long it takes for a child to react to a visual stimuli due to its distance in the environment. So a child’s visual abilities can influence how a child functions within the environment, but the child's visual functioning also may be influenced by environmental factors.
Knowledge of these three factors that can affect children's visual function will allow you to help make decisions about making the best use of a child's vision. Knowing terms such as *functional vision* is important, but much more is required for understanding a child's vision. For example, observing a child's visual skills, cognitive ability, personality, and self-esteem, and discussing his or her expectations of self and others are also important factors to consider.

**Section Review**

Select the best item to answer each of the following questions.

1. Which of the following is a factor that can affect how a child with low vision sees?
   a. individual ability
   b. psychological well-being
   c. both (a) and (b)

   The correct answer is (c). Factors that can affect how a child with low vision sees include a child's physical environment for daily activities, onset of the visual impairment, amount of vision, individual
ability, individual makeup, psychological well-being, and level of independence.

2. Which of the following is TRUE regarding the three main categories of Corn's model?
   a. They are separate and do not influence each other.
   b. Some aspect of each must be present for a child to have functional vision.
   c. none of the above

   The correct answer is (b). These three categories influence each other. Some aspect of each category must be present for a child to be able to use functional vision.

3. The appearance and disappearance of objects is a part of which of the following environmental cues?
   a. time
   b. space
   c. illumination

   The correct answer is (a). The appearance and disappearance of objects are part of the environmental cue of time. Time involves the
frequency, duration, speed, and distance of a visual object or presentation.

4. The condition that causes an individual's low vision is referred to as which of the following?
   a. etiology
   b. color and light perception
   c. acuity

   The correct answer is (a). Etiology is the condition that causes an individual's low vision.

5. What approximate percentage of children with low vision have additional disabilities?
   a. 20 percent
   b. 50 percent
   c. 90 percent

   The correct answer is (b). As many as 50 percent of children with low vision have additional disabilities.
6. Which of the following categories refers to past experiences and abilities that a child may apply to new situations or use for situations involving creativity?
   a. environmental cues
   b. visual abilities
   c. stored and available individuality

   The correct answer is (c). The category of stored and available individuality refers to past experiences and abilities that a child may apply to new situations or use for situations involving creativity.

7. Distance, which refers to a person's visual ability from various distances, is a factor in which of the following categories?
   a. visual abilities
   b. environmental cues
   c. both (a) and (b)

   The correct answer is (c). Distance is a factor in both visual abilities and environmental cues, and shows how Corn's categories can overlap.
**Short Answer**

8. Comment on ONE of the following points regarding children with low vision. You may discuss your own child, a child or student you are working with, the child used in the following case study, or a combination of all three.
   
a. how the child with low vision is neither sighted nor blind
b. how the term *legally blind* does not indicate a specific visual diagnosis
c. what factors might play a role in how a child sees
d. how Corn's model helps explain the complexity of low vision

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**Remember Susan**

Susan is 10 years old. She was born with an eye condition that affected her near vision and distance vision. She holds textbook material 2 inches from her face when she reads in class. Often she uses a magnifying glass or eyeglasses to enlarge reading material.
Susan cannot read the whiteboard in class unless she is about 3 feet from the board and a dark marker is used. Susan locates her friends on the playground at recess by remembering the color of their clothing and their body shape.

Many of Susan's friends cannot figure out why she has trouble seeing distance. They think she is sighted; after all, Susan seems to locate her friends on the playground easily.

**Suggested Responses**

The following are example answers.

a. Children with low vision are neither sighted nor blind. Low vision comes in many varieties, and each child is unique. Some have enough vision to recognize faces and distinguish the environment; others have enough vision to see things up close although they may need assistive devices. Still others may use glasses, yet not have full vision, like Susan from the case study. Susan's friends think she is fully sighted, as she wears glasses.
Using Corn and Koenig's definition of low vision can provide a positive approach to helping a child succeed because it focuses on maximizing the vision that the child with low vision has. Susan uses accommodations to help maximize her vision: a magnifying glass, eyeglasses, dark marker on the whiteboard, and memorization of color and body shape.

b. The term *legally blind* can cause confusion, making people think of full blindness. It should not be used to imply that a child is blind, and it does not indicate a specific visual functioning. *Legally blind* is used to determine the types of services and equipment a person with low vision qualifies for.

c. Many factors play a role in how a child sees:
   - physical environment for daily activities
   - onset of the visual impairment
   - amount of vision
   - individual abilities
   - individual makeup
   - psychological well-being
   - level of independence
Susan's vision is significantly impaired. But she is motivated to help herself use her remaining vision. If her friends continue to misunderstand her visual capability, however, it may affect her psychological well-being and negatively affect her vision.

d. Corn's model helps explain the complexity of low vision by organizing it into three main categories: environmental cues, visual abilities, and stored and available individuality.

- Environmental cues provide information about the person's surroundings. For example, Susan benefits from the contrast of a heavy, dark marker on a whiteboard.

- Visual abilities assess a student's etiology, acuity, visual field, motility, color and light perception, and brain function. Susan can recognize color and read with a magnifying glass or eyeglasses.

- Stored and available individuality refer to a child's past experiences and abilities that can be applied to new situations. Susan uses her memory of what her friends are wearing and
their body shape to find them on the playground.

All three categories influence each other, and an aspect of each must be present for a child to use functional vision.

This section introduced you to Corn's model of visual functioning, which presents many factors that may affect a child's visual functioning. These factors help determine which low vision accommodations and devices might be useful for a child with low vision.

**Summary**

This lesson discussed the perceptions and misperceptions related to low vision. You learned that having low vision is neither being fully sighted nor being fully blind, and that every child with low vision is different. It provided a working definition of low vision as well as defined other common terminology, such as *legally blind* and *functionally blind*. Finally, it presented general factors affecting vision and described Corn's model of visual functioning, which organizes and
explains the categories and factors involved with functional vision.
Lesson 1: What Is Low Vision?
Assignment 1

For general information on completing assignments, refer to the Getting Started instructions. Then start this assignment by giving your full name, address, and phone number. Also list the name of this course, Assignment 1, your instructor's name, and the date. Be sure to include the question number along with each answer. This assignment is worth 100 points.

Multiple Choice

Select the best item to answer each of the following questions. (5 points each; 50 points total)

1. When a person with low vision appears to have sight, which of the following is a common misconception that people might make?
   a. If a person has vision, he or she should not need assistance for reading.
   b. If a person is wearing glasses, why is he or she using braille?
   c. both (a) and (b)
2. Which of the following is a reason an infant or young child with low vision initially may be diagnosed as blind?
   a. The child squints his or her eyes a lot in the sun.
   b. The child may not react to visual stimuli such as toys or mobiles.
   c. The child is willing to explore his or her environment without prompting

3. The term *legally blind* is used to determine which of the following?
   a. whether a person is fully blind
   b. how a person sees
   c. whether a person qualifies for certain services and equipment

4. What is meant by the term *visual field*?
   a. the amount of space a child can see in front and at the sides
   b. the child's level of independence
   c. the area where a child can travel safely
5. Which of the following is TRUE about children with low vision?
   a. Those who have the same eye condition see in the same way.
   b. Children are either fully sighted or fully blind.
   c. Many factors play a role in how a child with low vision sees.

6. Which of the following is part of Corn and Koenig's helpful definition of low vision?
   a. Low vision is a visual acuity of 20/200 or less.
   b. People with low vision can enhance their ability to accomplish visual tasks.
   c. Children with the same eye condition have the same visual function.

7. Which of the following is a reason why Corn's model of visual functioning is useful?
   a. All of the factors and categories are necessary for functional vision.
   b. Knowing which factors affect a child's vision helps determine accommodations.
   c. The model decides whether a child is legally blind.
8. According to Corn's model of visual functioning, which category provides information about the person's surroundings?
   a. environmental cues
   b. visual abilities
   c. stored and available individuality

9. According to Corn's model of visual functioning, which of the following are factors that refer to a child's past experiences and abilities?
   a. etiology, acuity, visual field, motility
   b. cognition, sensory development, psychological makeup
   c. color, contrast, illumination, time, space

10. The fact that a child's visual abilities not only affect how that child functions within the environment but also are influenced by the environment is an example of what?
    a. The three categories of Corn's model overlap.
    b. Each category of Corn's model does not affect another.
    c. none of the above
Essay

Respond to the following question with a brief, complete answer of about 200 words. (50 points)

11. Now that you have read the information in this first lesson, describe how your perception of children with low vision has changed, by answering the following questions. You may discuss your own child, a child or student you are working with, the child in the following case study, or a combination of all three.

a. What kind of misconceptions about low vision have you had or run into with others? How might this lesson help deal with those misconceptions?

b. How does Corn and Koenig's definition of low vision help you understand and approach the child with low vision?

c. What factors play a role in how the child with low vision sees?

d. How does Corn's model of functional visioning help clarify how the child with low vision sees?
Dora

Dora is 6 years old and was born prematurely. She is considered legally partially sighted and exhibits moderate cerebral palsy and learning disabilities.

Dora loves to walk to school with the older students. They all take the same route every morning because Dora's mom told them Dora's ability to take different routes is hampered by her problem-solving abilities.

As much as Dora loves walking to school, she can't walk when it snows, unless the snow has been cleared off the pavement. The glare from the snow can cause Dora great difficulty in seeing, and her depth perception is poor. Even when the snow is shoveled, she has to be careful when stepping off curbs, as she could easily step down into water or slush. On wintry days when it's sunny, shadows from trees can affect her depth perception while walking. Due to her cerebral palsy, Dora's reaction time is slow and she often bumps into other students.
Once you have completed this assignment, send it to your instructor. Then begin Lesson 2: Causes of Visual Impairment in Children.