

Medical Model

defines disability in terms of biological impairments. Disability is viewed as a problem that is caused by diagnosed genetic disorders, disease, trauma, or other health conditions. Disability is treated as a biological problem that diminishes quality of life and needs to be treated with professional medical care.

Social Model

Rather than place the definition of "disability" entirely on the person with a disability, this model points out that society creates disabling conditions. To a large extent, "disability" is an avoidable condition caused by poor design.

- doesn't deny that there is a biological or medical component to disability. It merely points out that more inclusive designs can remove the barriers that people with disabilities face in their everyday lives. The model emphasizes the human rights of people with disabilities to participate in society in meaningful ways

- we are more disabled by the society that we live in than by our bodies and our diagnoses

Functional Solutions Model

model takes a practical approach to disability by identifying the impairments, or limitations, that are a result of disability. The model then seeks out solutions for eradicating these limitations through advancements in technology or methodology. There is less of a focus on the social and political aspects of disability, but more focus on applying innovation to overcoming the limitations of disability.

-Businesses that create and sell accessibility solutions often take this approach. They see a need and try to meet the need with their products and/or services.

Social Identity Model/Cultural Affiliation Model

People with disabilities may develop a sense of personal identity through consorting with others who share similar life experiences based on their disability. Together, the group develops a sense of culture based on these shared experiences.

-doesn't always serve as a useful basis for technical definitions of disability, because groups of people with different types of disabilities—or even without any disabilities—may consider themselves part of the same social group.

Charity Model/Tragedy Model

treats disabilities as unfortunate or tragic conditions worthy of special treatment. People without disabilities take pity on those with disabilities and set up fundraisers, projects, assistance, and other interventions to improve the condition of those with disabilities. Many people with disabilities find this approach offensive, even if the end result produces something that helps people with disabilities. With this approach, the offensive part is the attitude and the assumptions. People without disabilities are in the position of the givers; the "fortunate" ones. People with disabilities are in the position of the receivers; the "unfortunate" ones. This kind of arrangement sets up an unequal power balance, and an unhealthy social relationship between groups of people.

Blindness

Asightlessness or a loss of vision. While the term is often used to define a total loss of vision, it may also refer to partial blindness, where sight may be extremely limited (low vision)

Causes:

Diabetes

Macular Degeneration

Glaucoma

Accidents or traumatic injuries to the eye

Stroke

Retinitis Pigmentosa

Screen Readers

Convert the text on the web page into spoken words. Blind people listen to web pages

ICT Blindness Challenge: Cannot see digital or electronic interfaces (computers, automated teller machines (ATMs), mobile devices, airport kiosks, televisions, printers, copiers, phones, GPS devices, etc.)

- Screen readers can read interfaces and content out loud to users by converting digital text to synthesized speech, but only if they have been designed to be accessible. Screen readers do not announce text styles such as font, color, size, bold, and italic.
- Self-voicing interfaces and applications can communicate to users without the need for a screen reader, but these are appropriate mostly for broadcasting information, because they usually do not interact with the interface or content as screen readers do.
- Refreshable Braille output devices use screen readers to convert digital text to Braille. These devices are typically expensive, and only a minority of blind people know how to read Braille.

ICT Blindness Challenge: Cannot use screen readers on digital content and interfaces not designed with accessibility in mind

Interface designers and content authors can edit the markup to make it compatible with the assistive technologies used by blind people.

Architecture & Built Environment

Blindness Challenge: Cannot see when walking

- Canes help blind people feel their surroundings as they walk.
- Service animals (e.g. "Seeing Eye" dogs), trained to assist blind people, help them navigate their surroundings.
- GPS-based walking instructions with an audio interface, either automated or via a remote human navigator.
- Raised tiles on the ground to indicate the edge of a platform, a pathway along a sidewalk, the beginning of a staircase, etc.
- Eliminate low-hanging architectural features that a blind person could bump into
- Clear pathways without obstructions in hallways, sidewalks.

Architecture & Built Environment
Blindness Challenge: Cannot see signs
or other text on buildings or other
areas in the built environment

- Map and geolocation applications on mobile devices can announce the names and descriptions of buildings and other location-related information.
- Braille labels and descriptions on entrances, rooms, bathrooms, historical markers, and other points of interest can allow blind people to explore and understand their surroundings, as long as the person knows Braille, and as long as the Braille labels are easy to find.
- Tactile models of the exterior of buildings, or of floorplans of the interior of buildings help blind people form a mental map of their surroundings.

Consumer & Industrial Products

Blindness Challenge: Cannot see or feel the controls on flat interfaces on consumer devices such as microwaves, ovens, dishwashers, etc.

- Alternative interfaces with knobs or other tactile controls
- Audio interfaces
- Remote control through applications on mobile devices

Consumer & Industrial Products

Blindness Challenge: Cannot read the text on the containers or packaging for consumer items such as medicine, toothpaste, shampoo, sunscreen, hand cream, personal care products, foods, drinks, candy

Embossed Braille (or Braille stickers) on packaging and product containers help consumers identify items both in the store and after purchase.

Consumer & Industrial Products
Blindness Challenge: Cannot read
money to determine its value

-Applications on mobile devices can photograph the money and read the value to blind people.

Paper bills and coins could be manufactured in different sizes, shapes, or textures to allow blind people to distinguish the value based on touch.

-Non-cache systems of payment can allow blind people to make financial transactions via computers, mobile devices, or on-site payment hardware with screen readers or self-voicing output.

Consumer & Industrial Products
Blindness Challenge: Cannot read
books, magazines, posters, postal mail,
or other printed materials

-Optical character recognition software can convert scanned images of text into digital text readable by screen readers. The accuracy of the conversion depends on the quality of the original document, as well as font choices, line spacing, and the quality of the conversion software itself.

-Information can be placed online or in other digital formats to allow blind people to read the materials using their own assistive technologies.

Low Vision

- can see, but their vision is still quite far from perfect even with powerful corrective lenses
- may be unable to see well enough to drive or read most printed text unless they enlarge it
- Not a single condition; It is a broad category encompassing many different conditions, with varying degrees of vision impairment
- They can't see well enough to read small fonts or to clearly discern details without enlarging them.

Possible types and characteristics:

Blur; Blur with Low Contrast; Cataracts; Diabetic Retinopathy; Glaucoma; Hemianopia; Macular Degeneration; Retinal Detachment

Screen Magnification

shows a small portion of the screen at a time; it zooms in on a section of the screen and displays it at high resolution

- there are still some issues a user can encounter. For instance, if an image is particularly large, a user may need to scroll around the screen to see the whole thing. If a JavaScript alert pops up to the side of the current visual focus, the alert may actually appear out of the visible area for the user with low vision, so the user may not see the alert at all. It is best to place popups, alerts, error messages, and other similar messages near the visual focus, to make sure users don't miss them.

Color Customization

-For people with low contrast vision, or low color vision, colors may not be easily visible, and may be hard to distinguish from each other. Text that is too close in color or luminance (brightness) to the background can be hard to read. Some people may also experience pain when looking at bright lights or bright areas on paper or computer screens. All-white backgrounds can be particularly difficult. To attempt to remedy the effects of low contrast and bright areas, users may modify the colors either in the operating system or in the web browser.

-Colors can be used in web design, but it is crucial to not use color alone to convey important information since users customize colors based on what is best for them. Make sure the important information is represented in the text.

Low Vision Challenge: Small text can be
hard to read

- Screen magnifiers can enlarge the items on the screen to make them easier to read.
- Utilities to enhance contrast, change colors, or alter other aspects of visual appearance can improve legibility.
- Screen readers can supplement screen magnifiers by reading interfaces and content out loud to users through synthesized speech, but only if the digital information has been designed to be accessible.
- Self-voicing interfaces (on ATMs, kiosks, transportation systems, etc.) and applications can communicate to users without the need for a screen reader, but these are appropriate mostly for broadcasting information, because they usually do not interact with the interface or content as screen readers do.
- Alternative large print versions of small print text can make printed materials easier to read.
- Alternative digital versions (web, mobile applications, etc.) of printed materials can give users the ability to read the materials using their own assistive technologies.

Low Vision Challenge: Low contrast text
can be hard to read

- Software or hardware options can enhance the contrast of digital text.
- Interface designers and content creators can choose color combinations with high enough contrast to easily read

Color Blindness

Refers to the inability to distinguish between certain kinds of colors, especially colors that are of equal brightness or luminosity (even if the colors themselves appear quite different to people without this disability).

-There aren't many assistive technologies for people with color-blindness. For the most part, it is a condition that people just have to live with

Kinds of Colorblindness

- Red-Green: Most prevalent form of colorblindness; Deuteranopia and Protanopia are two common sub-types
- Tritanopia: blue-yellow colorblindness
- Achromatopsia: Greyscale blindness, very rare
- Red-Black colorblindness

Colorblindness Challenge: Certain color combinations -- red and green in particular -- can be difficult to distinguish

Materials can be designed in a way that does not depend on color as a way to convey information.

Deafblindness

the only option is to use a refreshable Braille keyboard in combination with a screen reader. Rather than have the screen reader read out loud in an audio format, people who are both deaf and blind have the screen reader output the text to the Braille keyboard, which they can then feel with their hands.

ICT Deafblind Challenge: Digital text
cannot be seen

A screen reader can convert text to Braille on a refreshable Braille device, or "printed" in a Braille embosser.

ICT Deafblind Challenge: Audio
(including the audio portion of videos)
cannot be heard

A text transcript of the audio can be converted to refreshable Braille by a screen reader, or "printed" in a Braille embosser.

Auditory Disabilities

involve hearing impairment, hearing loss, and deafness. People who have hearing impairment or hearing loss have diminished hearing and may have difficulty understanding speech and distinguishing foreground noise from background noise. Depending on the condition, some people may use hearing aids as an assistive technology, or may rely on lip reading to communicate with others. For those who have total loss of hearing, augmentative and alternative communication (AAC) such as sign language or communication boards are used to communicate with others.

deaf

the condition of deafness, the partial or total hearing loss a person experiences from a medical perspective

Deaf

Deaf Culture or Deaf Community

-focuses on the beliefs, cultural norms, values, and experiences shared between a group or groups of people who are deaf