

# Inclusive Design for a Digital World: Improving Accessibility for Blind and Visually Impaired Users

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## Introduction

As the world becomes increasingly digital, access to information, services, and tools is no longer optional—it's essential. However, for individuals who are blind or visually impaired, the internet and other digital environments are still full of barriers. These barriers prevent full participation in education, employment, communication, and social life. Despite growing awareness, accessibility is often treated as an afterthought rather than a foundational design principle.

Improving accessibility is not just about meeting compliance standards—it's about creating a world where everyone, regardless of ability, has equal opportunity to learn, work, and thrive. This article explores the digital challenges faced by blind and low-vision users, outlines practical strategies for accessible content creation, and discusses how platform design and policy can improve outcomes for people with visual impairments.

## Understanding Online Challenges for Blind and Low-Vision Users

Many organizations struggle to recognize the everyday barriers blind and visually impaired people face while navigating the digital world. However, with closer examination, it becomes evident that almost every aspect of the online experience can be improved for these users.

**Digital accessibility and inclusion** ensure that all users can access, understand, and interact with digital content. When companies and institutions prioritize usability, they empower blind and low-vision individuals to fully participate in the digital economy, education systems, and civic life.

## Designing for Better Accessibility

Since the internet is a predominantly visual space, many websites and apps unintentionally exclude people with visual impairments. Poor color choices, cluttered layouts, and missing descriptions can make even the most important content completely inaccessible.

Fortunately, a few key design practices can significantly enhance accessibility for blind and low-vision users:

### 1. Descriptions and Alt Text

All images should include **alt text**—brief descriptions that communicate what the image shows or represents. For videos, include **audio descriptions** that narrate visual elements. This ensures that essential information conveyed through visuals is not lost on users relying on screen readers.

## 2. Avoid Relying on Color Alone

Color should not be the only way to convey important information. For instance, indicating success with green or errors with red excludes users with color blindness or reduced vision. Pair colors with **text or icons** for clear communication.

## 3. Allow Text Scaling

Let users resize text up to **200%** without breaking your site layout. Many users with low vision rely on text scaling instead of full-page zoom. Flexible layouts help maintain readability across various screen sizes and devices.

## 4. Spacing and Readable Fonts

Text spacing greatly affects readability. Allow users to:

- Set **line spacing** to at least 1.5 times the font size
- Adjust **letter spacing** to 0.12 times the font size
- Modify **word spacing** to 0.16 times the font size

Use **sans-serif fonts** like Arial or Verdana, which are easier for visually impaired users to read than serif fonts like Times New Roman.

## 5. Use Strong Color Contrast

Ensure that text stands out from the background. Poor contrast can make content unreadable. Use contrast checker tools to meet minimum contrast ratios recommended by **WCAG 2.1** (<https://www.w3.org/WAI/standards-guidelines/wcag/>) guidelines.

## Accessible Materials for Blind or Visually Impaired People

Accessibility isn't only about digital platforms. The format of the content itself—documents, books, apps, and visuals—must also accommodate users with vision loss. Below are essential formats and practices for making content accessible:

### 1. Screen Reader-Compatible Documents

- Use accessible formats like PDF (tagged), Word, or HTML
- Tag headings, lists, tables, and provide alt text for images
- Avoid scanned documents—use real, selectable digital text

### 2. Braille Materials

- Provide **printed Braille** for signage and critical documents
- Offer **digital Braille files (.BRF)** for use with refreshable Braille displays

### 3. Audio Formats

- Create **text-to-speech versions** or **audiobooks**

- Include **audio descriptions** to explain visual content

#### 4. Accessible eBooks

- Use **EPUB 3** (<https://www.w3.org/TR/epub-overview-33/>) format for compatibility with screen readers, reflowable text, and embedded alt text

#### 5. Tactile Graphics

- Offer **raised-line graphics** for maps, graphs, and diagrams, especially in education
- Common in math, science, and geography

#### 6. Large Print

- Use **16–18 pt font or larger** with high contrast for printed materials

#### 7. DAISY Books (<https://daisy.org/activities/standards/daisy/>)

- Provide structured audio books using the **DAISY format** that supports navigation by chapter or page

#### 8. Accessible Web Content

- Follow **WCAG 2.1** (<https://www.w3.org/TR/WCAG21/>) guidelines
- Use semantic HTML, keyboard navigation, and clearly labeled forms

#### 9. Apps with VoiceOver / TalkBack Compatibility

- Test apps with **iOS VoiceOver** and **Android TalkBack**
- Use accessible components like labeled buttons, input fields, and consistent heading structures

### Improving Platforms & Outcomes for Blind and Visually Impaired People

Making materials accessible is only part of the solution. Platforms—websites, mobile apps, e-learning systems, and digital tools—must also be designed with accessibility at their core. Here’s how organizations can improve outcomes for users with vision impairments:

#### 1. Platform Design & Development

- Implement **WCAG 2.1 Level AA** (or **AAA**, where possible)
- Offer content in **multiple formats**: audio, text, and tactile
- Don’t rely on color or icons alone to communicate important messages
- Test platforms with **real blind users** or **accessibility simulation tools**

#### 2. Assistive Technology Support

Ensure compatibility with:

- Screen readers like **NVDA**, **JAWS**, and **VoiceOver**
- **Screen magnification software**
- **Refreshable Braille displays**

### 3. Training & Support

- Provide digital skills training for blind users
- Educate **staff and content creators** in accessibility standards and best practices

### 4. Inclusive Content Creation

- Use **plain language**
- Include **descriptive hyperlinks** (e.g., “Download brochure” instead of “Click here”)
- Offer content in **multiple formats** from the beginning
- Caption videos and describe images in multimedia

### 5. Inclusive Communication & Outreach

- Offer **accessible contact options** like phone, email, or accessible live chat
- Ensure **feedback forms and surveys** are screen reader-friendly

### 6. Representation & Co-Design

- Involve blind and visually impaired users in **design, testing, and feedback**
- Hire **accessibility consultants with lived experience**

### 7. Policy & Institutional Support

- Integrate accessibility into **organizational policies** and standards
- Require accessible tools and services during procurement processes

### 8. Outreach to Underrepresented Communities

- Partner with **disability advocacy groups**
- Provide **scholarships or access incentives** for blind individuals in underserved communities

### Final Thoughts: Designing with Accessibility in Mind

Building a digital world that includes everyone is not only possible—it’s imperative. Whether you're creating a website, developing a new app, writing content, or running a public service, designing with accessibility in mind benefits everyone. Accessible design often leads to cleaner interfaces, better usability, and more innovative products.

For blind and visually impaired people, accessibility can be the difference between exclusion and empowerment. The tools, standards, and knowledge already exist. What's needed is the **commitment to act**.

By integrating accessible materials, inclusive design, and policies that prioritize equity, we move closer to a world where no one is left behind in the digital revolution.