Centre for Human Rights Research | University of Manitoba

A Guide for Inclusive and Accessible Design Principles

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This guide combines critical principles for ensuring your digital content, particularly visual designs and social media posts, is accessible to people with various abilities. It incorporates key concepts for high visibility, colour blindness, photo sensitivity, unconscious bias, screen reader accessibility, and design best practices to help create inclusive designs that can be enjoyed by all users.

High Visibility Design Principles

Goal: Make imagery and text more accessible to a broad audience, especially people with low vision or limited contrast sensitivity. High visibility ensures content is readable and distinguishable for individuals with visual impairments.

1 High Contrast

Ensure that text contrasts sharply with its background. Use dark text on a light background or light text on a dark background. Aim for a contrast ratio of 4.5:1 for normal text and 3:1 for large text [1]. This improves legibility, particularly for users with low vision.

2 Bold Fonts

Use bold, clear fonts for important messages or headers. This enhances readability and allows users with reduced visual acuity to scan and understand the content quickly [2].

3 Avoid Colour-Only Communication

Avoid relying solely on colour to convey meaning. Pair icons or text with other distinguishing features such as patterns, shapes, or textures. This ensures that information is clear to individuals who may have difficulty perceiving colours.

4 Execution and Feedback:

Ensure text is legible on all devices. A minimum font size of 16px is recommended for body text. This ensures that your text remains legible on smaller screens and for users with visual impairments.

5 Adequate Spacing

Ensure sufficient spacing between text, images, and other design elements. Overcrowded designs can be hard to follow and cause cognitive strain, so leaving adequate space enhances focus and comprehension.

Pro tip

Review your design using a black and white filter to ensure there's sufficient contrast. Alternatively, you can use tools such as Whocanuse or Contrast Ratio to verify if the text has adequate contrast against the background [1].

Designing for Colour Blindness

Goal: Make sure content is accessible to individuals with various types of colour blindness, which affects a significant portion of the population.

1. ## Avoid Relying Only on colour

Use text labels, patterns, or shapes alongside colours. This assists users in distinguishing between elements, especially if they can't perceive certain colours. For example, a button can have text and a pattern to help convey its function without depending on colour alone.

2. ## Test for Colour Blindness

Use online tools to simulate how your design appears to individuals with different colour vision deficiencies. This allows you to verify that your colour choices are accessible.

3. ## Effective colour Combinations

Avoid problematic colour combinations, especially red-green pairs. Blue-yellow and dark blue-yellow combinations are better options for colour blind accessibility.

4. ## Provide Alternative Text for Visual Content

Always include alternative text (alt text) for images and graphics, ensuring that screen readers can describe the content for users with visual impairments [1].

Useful Tools

1. **Coloring for Colorblindness by David Nichols**

Check if your colour palette is colour blind friendly for different types of colour blindness.

2. **Color Blindness Simulator and Converter Online**

Check how specific colours are eprceived by various types of colourblindness.

3. **Colorblindness Simulator**

Check if an image and/or website would look for various types of colour blindness.

4. **Whocanuse**

Check if text over a background colour is readable for those that are colour blind or visually impaired.

Designing for Screen Readers

Goal: Ensure content is compatible with screen readers to help users with visual impairments navigate your design.

1 ## Choose Clear, Legible Fonts

Sans-serif fonts are more readable by screen readers than serif fonts. Avoid overly decorative or script fonts that may be difficult for screen readers to interpret .

2 ## Font Size and Scaling

Use a minimum of 16px for body text to ensure readability, particularly for those using screen magnifiers [3]. Make sure text can be resized without losing meaning or affecting layout integrity.

3 ## Heading Structure

Use appropriate HTML tags (e.g., H1, H2, H3) to organize your content. Screen readers rely on these tags to interpret the structure of your content, making it easier for users to navigate [5].

4 ## Provide Descriptive Alt Text

Alt text should be concise and descriptive, ensuring that screen reader users understand the content of images [1]. Avoid redundancy by not repeating text embedded in images in the alt text.

5 ## Test with Screen Readers

Use tools to test how your design reads aloud. Soliciting feedback from screen reader users can also provide invaluable insights.

Useful Tools

Tools to test for screen reader accessibility:

- VoiceOver (Mac)
- NVDA (Windows)
- Narrator (Windows)

Photosensitivity Considerations

Goal: Prevent photosensitive seizures or discomfort triggered by flashing, flickering, or rapidly changing images.

1 Avoid Flashing or Flickering Content

The WCAG guidelines recommend that no content should flash more than three times per second. If flashing content is unavoidable, ensure that it is at a slower, controlled speed and provides options for users to pause or stop the animation [5].

2 Use Calm, Consistent Transitions

Animations, if necessary, should be slow and steady, avoiding rapid movements or flashing lights. This reduces the risk of triggering photosensitive seizures [5].

3 Warn Users

If your design includes any potentially triggering content, such as flashing lights, provide a clear warning upfront so users can choose to avoid it [3]. Ensure that warning is visible for an appropriate duration before video starts. Do not only put photosensitivity warnings in caption, ensure that they are on screen as well.

4 Offer Alternatives

Where possible, provide a static alternative for critical information that is presented through animation. This ensures users with photosensitivity can still access the content.

Three Flashes or Below Threehold

WCAG 2.0 Success Criterion 2.3.1 ("Three Flashes or Below Threshold"), aims to prevent content from flashing more than three times per second, as such flashes can trigger seizures in people with photosensitive epilepsy. It emphasizes that flashing content should be kept under strict thresholds, particularly with respect to red flashes, which are more likely to trigger seizures [5].

Unconscious Bias in Graphic Design

Goal: Design with awareness of unconscious biases related to shapes, colours, and associations, to ensure that your content is inclusive and non-stereotypical.

1 Shape Associations

Different shapes can evoke specific cultural or psychological associations. For example, circles can suggest unity and softness, while squares and rectangles may signify stability or order. Triangles can indicate strength or danger depending on their orientation. Be mindful not to use shapes that may unintentionally stereotype or imply negative traits [6].

2 Colour and Symbol Associations

Colours can have strong associations that differ across cultures [7]. For example, red may symbolize danger or passion in some contexts, while green can represent nature or tranquility. Be careful not to use colours that unintentionally reinforce harmful stereotypes.

3 Cultural Sensitivity in Symbols

Different cultures interpret symbols differently [9]. A peace gesture in one culture could be offensive in another. Ensure that the symbols or icons you use are culturally sensitive and do not carry negative connotations.

4 Inclusive Imagery

Ensure your designs reflect diverse identities, including ethnicities, gender expressions, body types, and abilities. Avoid relying on stock images that depict one demographic, and aim for empowering and diverse representations.

5 Inclusive Language

Be mindful of language choices. Avoid terms that may exclude or stigmatize certain groups. Use person-first language and ensure that your tone is respectful and inclusive.

How to Avoid Bias in Your Designs

Goal: Reduce unconscious bias in your designs by reflecting diverse perspectives and engaging in inclusive practices.

1 ## Reflect on Your Own Biases

It’s crucial for designers to recognize and challenge their own biases related to gender, race, culture, and ability. Take time to educate yourself and be open to feedback on your designs from diverse perspectives.

2 ## Use Diverse Visual and Emotional Cues

Incorporate a variety of racial, gender, and cultural identities in your imagery. Consider the emotional impact of your design on different groups and avoid imagery that could unintentionally alienate or exclude others.

3 ## Conduct User Testing

Before finalizing your design, gather feedback from individuals to identify any unintended bias in your work. This feedback can help ensure that your design is truly inclusive.

4 ## Collaborate with Diverse Teams

Working with a team that brings a wide range of perspectives can help you spot biases you might overlook and refine your design for inclusivity.

List of Accessible Fonts

The following fonts are highly recommended, meaning that they have a a goof thickness , width, and height which make them legible [1].

- Verdana (sans serif)
- Tahoma (sans serif)
- Arial (sans serif)
- Helvetica (sans serif)
- Lucida Sans (sans serif—Windows)/Lucida Grande (sans serif—Mac)

Examples of Unconsious Bias in Graphic Design

Proximity

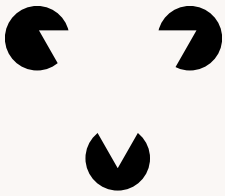
Objects close together may be perceived as a group [9].

Similarity

Objects that are similar in appearance (color, shape, size, etc.) are perceived as belonging together[9].

Closure

People tend to perceive a complete image even when part of the information is missing or obscured [9]. For example, is there really a triangle present in the graphic on the right?



Continuity

Elements on a line or curve tend to be perceived as related [9].

Hierarchy Bias

Elements with high opacity are typically perceived as more dominant or important than those with low opacity. This can lead to an inherent bias toward perceiving opaque elements as more relevant or significant, while transparent or partially transparent elements may seem secondary or less worthy of attention [10]. This can also be true when creating infographics using colour gradients.

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