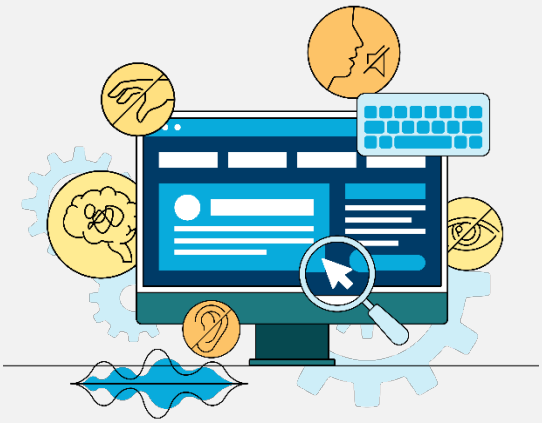


Designing Surveys for Accessibility

Introduction

Accessible survey design is essential for including all potential respondents, particularly those with disabilities or who speak English as a second language. This inclusivity ensures that every voice can contribute to data that often influences decisions in policy and service provision.

While online platforms have become the most common medium for distributing surveys, paper-based surveys continue to be important, especially in areas with limited internet access or among populations who may not be comfortable with digital technology. Ensuring accessibility in both digital and traditional formats is key to effective and comprehensive data collection.

This guide offers practical tips for creating surveys that follow the Web Content Accessibility Guidelines (WCAG). These guidelines are designed to make online content accessible to people with a range of disabilities, including visual, auditory, physical, speech, cognitive, language, learning, and neurological impairments.

Implementing the principles outlined in this guide will not only enhance the accessibility of online surveys but will also improve the usability of paper-based surveys.

Web Content Accessibility Guidelines (WCAG)

Before beginning to build your survey, start by familiarizing yourself with the Web Content Accessibility Guidelines (WCAG), which are the international standards for accessibility. These guidelines cover a range of recommendations for making web content more accessible to

people with disabilities, including visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities.

WCAG is built around four fundamental principles, often referred to by the acronym "POUR," which states that content must be:

- **Perceivable**: Information and user interface components must be presentable to users in ways they can perceive. This includes providing text alternatives for non-text content, making it easier for users to see and hear content.
- **Operable**: User interface components and navigation must be operable. This involves making all functionality available from a keyboard and giving users enough time to read and use content.
- **Understandable**: Information and the operation of the user interface must be understandable. This means that text content should be readable and understandable, and web pages should appear and operate in predictable ways.
- **Robust**: Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies. This involves ensuring compatibility with current and future user tools.

Below are some suggestions for how you can align your survey with these principles.

Perceivable

In survey design, ensuring that your content is Perceivable means that all users, regardless of sensory abilities, should be able to access the information presented. This principle requires that information be delivered in ways that any user can receive and process. For surveys, this involves presenting text, images, and multimedia in easily discernible formats. From providing alternative text for images to ensuring audio and visual content is clear and accessible, the goal is to ensure that no user is excluded from participating due to sensory impairments.

Visual Design

The visual design of your survey pertains to the aesthetic and functional aspects of the survey that ensure all respondents can perceive and interact with the content effectively. This includes considerations for color, typography, layout, and visual aids that accommodate

diverse needs, especially those of individuals with visual impairments or cognitive disabilities. By focusing on these elements, survey creators can enhance readability, reduce visual fatigue, and provide a universally navigable experience.

- **Contrast and Font**: It's important to use high contrast color schemes between text and backgrounds to enhance legibility. Text should be large enough to be easily read, typically no smaller than 14-point size, with a preference for clear, sans-serif fonts such as Arial or Helvetica. These choices help in reducing eye strain and making content accessible to individuals with visual impairments.

- **Avoid Color Reliance**: Relying solely on color to convey information can alienate those who are colorblind or have difficulty distinguishing colors. Instead, incorporate text labels or universally recognizable symbols alongside color cues. For example, using both color and text labels in a graph ensures that the information is accessible to everyone.

- **Consistency**: Maintain a uniform layout and structure across both digital and paper-based surveys to prevent confusion and aid in navigability. This includes keeping a consistent order of questions and using similar navigational cues such as arrows or tabs, which are helpful for people with cognitive disabilities who benefit from predictable patterns.

Media and Timing

Pay special attention to multimedia elements and time constraints within your survey to ensure they are inclusive for all participants. This involves providing alternative means for understanding content that might traditionally be conveyed through time-based or visual media, thus supporting respondents who have hearing or visual impairments, or cognitive and neurological disabilities. Additionally, consider the time limits imposed on survey responses to accommodate those who may need more time to comprehend and answer the questions.

- **Alternative Text for Images**: To ensure that images used in surveys are accessible, provide comprehensive alt text that describes the image's function and context rather than just its appearance. For example, if an image is used to indicate a transition between sections, the alt text should explain this function. Use W3C's Alt Decision Tree for help.

- **Captions and Transcripts**: If videos or audio clips are used in the survey, provide captions and/or transcripts. This not only aids individuals who are deaf or hard of hearing but also benefits those who prefer to read along due to language or cognitive

reasons.

- **Avoid Automatic Media Playback**: Automatically playing videos or audio can be disruptive, particularly for users who use screen readers or those with cognitive disabilities that make unexpected sounds and movements startling or difficult to process. Allow users to initiate media playback themselves.

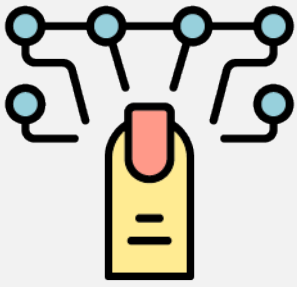
- **Pause, Stop, and Control for Media Playback**: Offer controls that allow users to pause, stop, and adjust the volume of audio and video content. This feature supports users with auditory sensitivities and those who may need more time to process audiovisual information.

  Mobile Consideration: Ensure media player controls are large enough to be used on a mobile device and can be operated with touch.

- **No Time Limits**: Wherever possible, avoid using time limits for survey completion to accommodate users who need longer to read or comprehend the questions due to disabilities or language barriers. If time limits are necessary (e.g., for research validity), consider offering the option to extend the time as needed.

- **Accessible Media Players**: Use media players that are compatible with various assistive technologies and ensure that all player controls (like play, pause, and adjust volume) can be navigated using a keyboard alone.

  Key accessibility features to look for in media players include keyboard navigability, screen reader compatibility, captions, audio descriptions, and customizable playback controls. YouTube and Vimeo are two common options with accessibility features.



Operable

The Operable principle ensures that all survey functionality is accessible to everyone, emphasizing that the interface cannot require interaction beyond a user's capability. For survey design, this means accommodating various methods of navigation and interaction, such as keyboard-only navigation and sufficient time to respond to survey questions. This principle is crucial for users with physical, motor, or neurological limitations, ensuring they can navigate through your survey without encountering barriers that prevent completion.

Structure and Navigation

Organizing content in a logical and intuitive manner ensures that all respondents can navigate and understand the survey easily. Effective structure and clear navigation aids are critical for users relying on assistive technologies such as screen readers, as well as those with cognitive disabilities who benefit from predictable and straightforward survey layouts.

- **Logical Structure**: Organizing survey content with a clear hierarchy using headings, sections, demarcated groups, and pages helps users understand how the survey is organized. For screen reader users, proper use of HTML headings (H1, H2, H3, etc.) is essential. This structure helps convey the organization of the content and enables quick navigation to different sections.

- **Mobile Single Column Layout**: Design your surveys using a single-column layout for mobile devices to enhance readability and facilitate easier navigation. This simplifies the visual presentation and makes it easier for users with motor impairments to select options and input responses, as they won't have to navigate across a wide or complex layout.

- **Keyboard Navigation**: Ensuring that every interactive element in the survey can be accessed and operated through keyboard inputs alone is crucial. This includes not just navigating through questions and selecting answers but also accessing all ancillary elements like help information, navigation buttons, and tools for adjusting settings.

- **Error Navigation**: When errors occur (such as missing required answers), ensure that messages are not only clear but also that users are easily able to navigate to the error location. Implementing direct links in the error messages that take users back to the problem area can significantly ease the correction process for all users, especially those with cognitive impairments.

- **Skip Navigation Links**: Providing "skip to content" or "skip navigation" links at the beginning of the survey allows users who rely on screen readers or keyboards to bypass repetitive content, directly accessing key areas of the survey.

- **Breadcrumb Navigation**: For longer surveys, using breadcrumb navigation helps users understand their location within complex surveys and navigate back to previous sections easily. This is particularly helpful in multi-page surveys or those that branch into different sections based on responses.

- **Alternative Mobile Navigation**: Offer alternative navigation options for complex actions that might be difficult on a mobile, such as dragging or long-pressing, which

can be less intuitive for some users.

Technical Considerations for Screen Readers and Keyboard Navigation

When designing surveys, it's important to consider how different question types interact with assistive technologies like screen readers and keyboard navigation. Some question formats can pose challenges for users who rely on these technologies, and it's crucial to either avoid these types or implement them with special care to maintain accessibility.

Question Types to Avoid or Modify:

Dropdown Selection	**Challenges**: Dropdown menus can be difficult to navigate using a keyboard and can also be problematic for screen readers if not properly labeled or if they contain many options. **Alternatives**: Use radio buttons or checkboxes if possible, as these are easier to navigate using a keyboard and are more straightforward for screen readers to interpret. If dropdown menus must be used, ensure they are properly labeled and consider limiting the number of options to make navigation simpler.
Drag & Drop Ranking	**Challenges**: Drag and drop interfaces are typically inaccessible to keyboard users and can be very challenging for screen readers to interpret. **Alternatives**: Offer a ranking system where users can select numbers from a list for ranking items or enter numeric values next to each item being ranked. This alternative provides a clear and linear navigation path for keyboard users and readable options for screen readers.
Sliders	**Challenges**: Sliders are often not well-supported by screen readers and can be difficult to accurately control with a keyboard. **Alternatives**: Consider replacing sliders with radio buttons or numeric input fields that allow users to input a precise value. This method is much more accessible for both keyboard users and those using screen readers.
Image-Based Questions	**Challenges**: Images without proper alt text can be completely inaccessible to users with visual impairments. Additionally, image maps or clickable images can be difficult to navigate and understand.

> **Alternatives**: Always use clear, descriptive alt text for images. For questions that require selecting parts of an image, consider providing a text-based alternative where users can make selections from a list.

Understandable

Making your survey understandable involves designing interfaces and information that are clear and comprehensible to all users. In survey contexts, this principle ensures that both the content and the operation of your survey are predictable and easy to follow. Language clarity, consistent navigational aids, and logical question progression are key elements of this principle. This not only aids those with cognitive impairments but also enhances the overall user experience, making the survey more intuitive for respondents from varied backgrounds.

Instructions and Assistance

Providing clear, accessible instructions and responsive assistance is crucial in making surveys inclusive. This support should be readily available regardless of the format—be it paper or digital. Detailed instructions ensure that all respondents, especially those with accessibility needs, understand how to complete the survey accurately and know where to get help if needed.

- **Comprehensive Instructions**: Begin both paper and digital surveys with a concise introduction that explains the purpose of the survey and an overview of how to complete it. For *digital surveys*, embed interactive tooltips or help icons that can provide additional information without cluttering the main content. In *paper surveys*, use sidebars or footnotes for the same purpose. Before each section or new type of question, offer clear instructions that prepare the respondent for what is coming next.
- **Mobile-Specific Instructions**: Provide clear guidance on how mobile users can navigate the survey, including gestures they may need to use (like swipe, tap, double-tap).
- **Consistent Formatting**: Use consistent formatting cues across both digital and paper formats. Ensure headings, instructions, and questions are visually distinct and follow a logical order that naturally guides the respondent through the survey.

- **Error Handling and Feedback**: Design error messages to be specific and constructive. For digital surveys, implement real-time validation that gently alerts respondents when information is missing or incorrectly entered, guiding them on how to fix it. For paper surveys, provide examples or a guide on common mistakes to look out for and how to correct them. This approach helps prevent confusion and ensures that respondents do not abandon the survey due to unclear instructions.

- **Contact Information for Assistance**: Include clear and visible contact information where respondents can reach out for help. This should be positioned prominently at the beginning and end of digital surveys, and in the header or footer of each page of paper surveys. Offer multiple forms of contact, such as phone numbers, email addresses, and possibly an online chat option, to accommodate different preferences and needs.

- **Accessibility Features**: Ensure that digital surveys are compatible with assistive technologies, such as screen readers, and that navigation can be achieved via keyboard only. For paper surveys, offer to provide the survey in alternative formats (e.g., large print, Braille) upon request.

Text Clarity and Language Translation

Creating surveys that are clear and accessible in multiple languages is necessary for engaging a diverse and broad respondent base effectively. This section details strategies to enhance text clarity and ensure accurate translations, making surveys accessible to all participants, including those with cognitive disabilities or non-native language speakers.

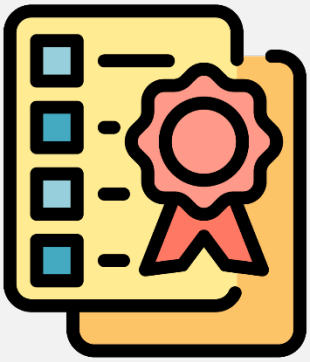
Simple Language

- **Use Clear, Concise Language**: Opt for straightforward, easily understandable language. This is especially important to accommodate respondents with cognitive disabilities who may struggle with complex vocabulary or convoluted sentence structures.

- **Avoid Jargon and Technical Terms**: Minimize the use of industry-specific jargon, acronyms, or technical terms unless absolutely necessary. If such terms must be used, provide clear definitions within the survey.

Translation Considerations

- **Identify Target Languages**: Based on demographic research during the data collection planning phase, identify which languages, besides English, are prevalent among your target audience. Common additional languages might include Spanish, but depending on your community, languages like Chinese, Arabic, or Vietnamese might also be necessary.
- **Professional Translation Services**: Whenever possible, use professional translators rather than automated translation tools to ensure accuracy and cultural relevance. Professional translators can adapt the survey content to reflect local dialects, idiomatic expressions, and cultural nuances that automated tools often miss.
- **Consistency Across Versions**: Ensure that the translation is consistent in terms of terminology and style across all versions of the survey. This is crucial for maintaining the integrity of the data when analyzing responses from different language groups.
- **Pretest the Translated Survey**: Before full deployment, pretest each language version of the survey within the relevant communities to ensure the translations are clear and the survey is understood as intended. This can help catch any issues with language or cultural appropriateness before the survey is widely distributed.
- **Accessibility of Translated Surveys**: Make sure that the translated versions adhere to the same accessibility standards as the original. This includes proper labeling, clear instructions, and navigation that is accessible to those with disabilities.



Robust

Robust design means creating a survey that can be interpreted reliably by a wide variety of user agents, including assistive technologies. A robust survey can adapt to the evolving landscape of technology without losing its functionality. This involves continued testing, ensuring your survey is accessible across different platforms and devices, keeping up with new guidelines and technologies, and using clean, standards-compliant coding practices to accommodate future needs. This principle underscores the importance of forward-thinking in survey design, aiming for inclusivity as technologies evolve.

Continuous Testing & Feedback

Continuously testing and refining the accessibility of a survey is vital to ensure it remains effective and inclusive. This iterative process involves gathering and incorporating feedback from diverse users.

- **Conduct Accessibility Testing**: Employ both automated tools and human testers, including people with various disabilities, to evaluate the accessibility of your survey. This mixed-method approach provides a comprehensive understanding of accessibility issues that might not be caught by automated tools alone.
- **Collect User Feedback**: Actively seek feedback from respondents on their experience with both the digital and paper formats of the survey. This direct input is invaluable for identifying areas that need enhancement.
- **Accessibility Audits**: Schedule regular accessibility audits to ensure that new features or updates to the survey maintain the required accessibility standards. Changes in technology or standards can otherwise inadvertently compromise accessibility. This is especially important for surveys that are open for long periods or are used as templates for subsequent surveys.
- **Document Accessibility Practices**: Maintain documentation of accessibility practices and updates made to the survey. This not only ensures consistency and accountability but also assists in training new team members or informing stakeholders about the survey's accessibility features.
- **Mobile Device & OS Compatibility**: Ensure the survey platform and its features are tested across a variety of mobile operating systems and browsers to confirm robust functionality. This includes checking compatibility with both newer and older versions of iOS and Android.

Technical Implementation for Developers

This section is tailored for developers, focusing on the essential technical aspects of creating accessible digital surveys. It offers instructions on employing specific web technologies and coding practices that ensure accessible surveys, including those utilizing assistive technologies. Non-developers may forgo this section, focusing instead on broader design principles covered elsewhere in the guide.

- **Semantic HTML**: Use semantic HTML to structure the survey. Employ the correct HTML elements for their intended purpose, such as form, input, label, and button. This helps assistive technologies interpret the page structure correctly and improves the survey's SEO.

- **Proper HTML**: Ensure that all form elements are clearly labeled. Use the HTML label tag to link each label directly to its corresponding input element using the for attribute. This is essential for screen readers to convey the purpose of each field accurately to users with visual impairments.

- **ARIA Attributes**: Implement ARIA (Accessible Rich Internet Applications) attributes to enhance the accessibility of web components that lack native semantic structure. Use ARIA roles, states, and properties to provide additional context to assistive technologies, ensuring that non-standard UI components are accessible.

- **Focus Management**: Manage focus effectively to ensure that keyboard users can navigate logically and efficiently through the survey. Implement focus control to guide users through interactive elements and prevent focus from becoming trapped or lost.

- **Scalable Text**: Ensure text size and button sizes are sufficiently large to be easily readable and tappable on mobile devices. Implement scalable units for text (like em or rem) to enhance readability on smaller screens.

- **Responsive Design**: Use CSS media queries to set responsive breakpoints and flexible grid layouts that adapt to the viewer's device. Test responsiveness and ensure that all interactive elements like buttons and form fields are usable on smaller screens. Remember to consider the accessibility of these elements by maintaining adequate size and spacing for touch interactions.

Resources

General

Web Content Accessibility Guidelines (WCAG) Overview

This is the official page for the WCAG, providing detailed guidelines and extensive resources on how to make web content accessible. This page is useful for anyone looking to understand the fundamental principles of accessibility and how to apply them to various digital formats.

Visit the WCAG website

Alt Decision Tree

W3C's Alt Decision Tree provides detailed guidance on how to use the alt attribute effectively for images. It offers a step-by-step approach to deciding appropriate alt text, covering different types of images such as decorative, informative, and functional, and scenarios where images contain text or are part of interactive elements.

Visit the Alt Decision Tree website

No Mouse Challenge

The No Mouse Challenge is an initiative aimed at raising awareness about accessible web design by encouraging users to navigate websites without using a mouse. This challenge emphasizes the importance of keyboard-friendly website design, supporting users who rely on keyboards due to physical disabilities, and highlights the broader need for creating universally accessible digital environments.

Visit the #NoMouse Challenge Website

Accessibility Checkers

Accessibility checkers are tools used to evaluate the accessibility of web content based on established standards like the Web Content Accessibility Guidelines (WCAG). These tools help identify and report accessibility issues, providing guidance on how to resolve them.

WAVE Web Accessibility Evaluation Tool

WAVE is a suite of evaluation tools that help authors make their web content more accessible to individuals with disabilities. WAVE can identify many accessibility and Web Content Accessibility Guideline (WCAG) errors, and also facilitates human evaluation of web content.

Visit the WAVE Accessibility Evaluation Tool

Color Contrast Analyzer

This tool allows users to check the color contrast of texts against background colors to ensure that information is easily perceivable. This is crucial for designing accessible digital content as outlined in WCAG guidelines.

Visit WebAIM's Color Contrast Analyzer

Screen Readers

Screen readers are software applications that convert text displayed on digital screens into synthesized speech or Braille, allowing individuals who are blind or visually impaired to interact with computer interfaces and internet content. They help navigate through websites, read documents, and operate applications by vocalizing the content and interface elements or transmitting the information to a Braille display.

NVDA (NonVisual Desktop App)

NVDA is a free and open-source screen reader for Windows. It enables blind and vision-impaired people to use computers. It reads the text on the screen in a computerized voice. This tool can be crucial for testing web accessibility from a visually impaired user's perspective.

Visit the NV Access website

JAWS (Job Access with Speech)

JAWS is a popular screen reader for Windows users. It's designed for users whose vision loss prevents them from seeing screen content or navigating with a mouse. JAWS provides speech and Braille output for the most popular computer applications on your PC.

Visit the Job Access with Speech (JAWS) website

Accessibility Guides by Platform

Below are the accessibility guides and best practices provided by some of the most common survey and web form builder options.

Survey123

The Esri blog post provides web accessibility best practices for authors using Survey123. It discusses specific challenges and solutions in designing accessible surveys, including tips on question design, color contrast, and the use of alternative text for images to ensure surveys are usable by people with disabilities.

Visit the Survey123 accessibility best practice guide

SurveyMonkey

This resource from SurveyMonkey discusses how to create accessible surveys when using their platform. It provides guidelines and best practices that align with the WCAG principles and offers practical tips and choosing the right themes and question types. Go to the SurveyMonkey accessibility guide

Qualtrics

This website offers best practices for designing accessible surveys in Qualtrics. It advises on themes and question types, as well as platform-specific resources like its internal accessibility checker and the option to prevent inaccessible surveys from being published.

Visit the Qualtrics Accessibility Guide