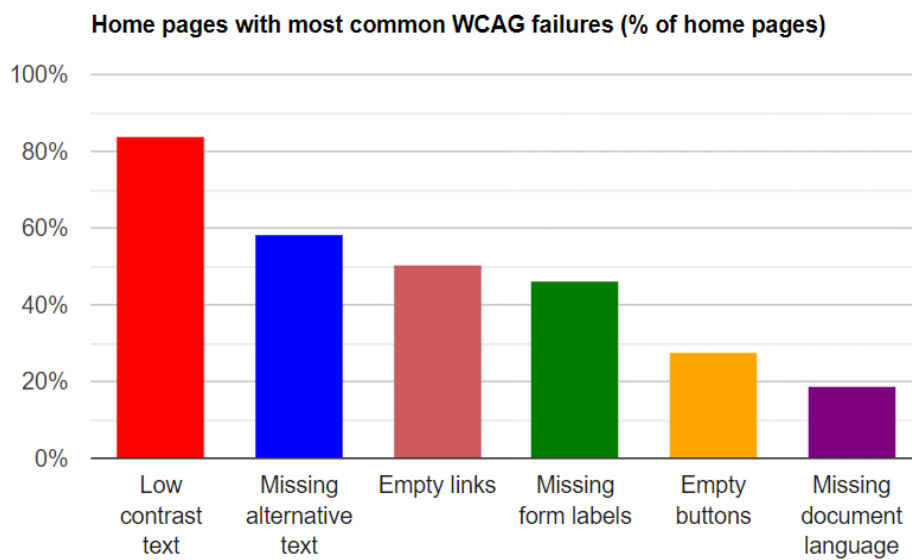


Academic Innovation, Strategy, and Design Department

Improving Learner Accessibility with AI

AI-supported tools do not replace specialized assistive technologies, but they do add an additional degree of accessibility and support. The readily available, free, and mainstream nature of the functionality discussed below is important in light of the fact that only 1/3 of college students with a disability share that with their institutions ([NCES, 2022](#)).



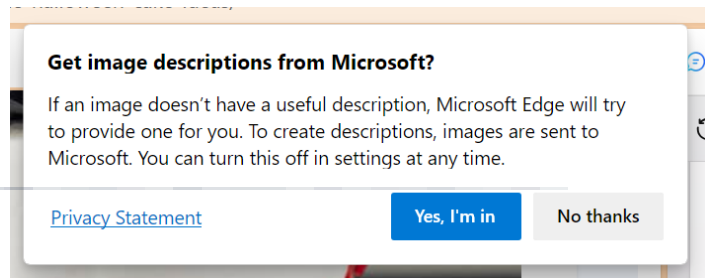
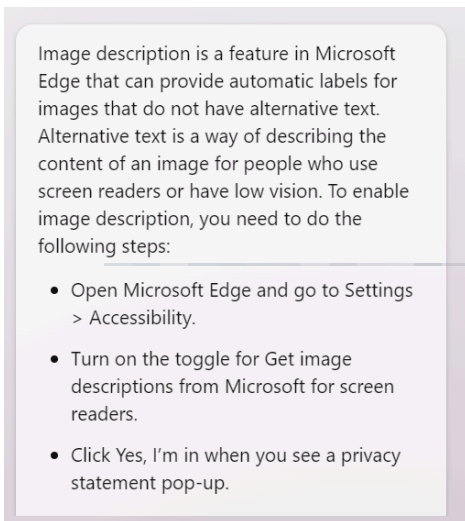
*Figure 1 Table sharing the most common failures to meet Web Content Accessibility Guidelines (WCAG) in online homepages.
Source: The WebAIM Million (2023).*

In the [WebAim Million report](#), [WebAIM](#) (web accessibility in mind) assessed the degree of user accessibility for the most popular million homepages and web domains. Figure 1 outlines the most commonly recorded shortcomings in 2023: low-contrast text and the lack of alternative text. Low contrast text implies the color contrast between the text and a page is not significant enough for individuals with low vision/colorblindness; alternative text is a brief written description of an image that screen readers can read.

MISSING IMAGE INFORMATION

EDGE BROWSER:

- Microsoft Edge can auto-generate ALT text for images lacking that information: three-dot horizontal bar in upper right-hand corner > Settings > Accessibility > “Get image descriptions from Microsoft for screen readers”



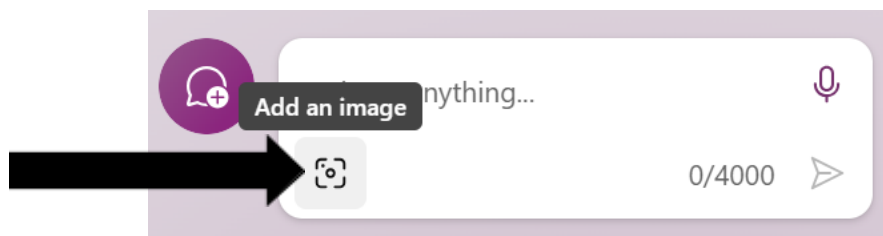
CHROME BROWSER:

- Google Chrome will provide ALT text “[i]f an image [already] doesn’t have a useful description”: three-dot vertical bar in the upper right-hand corner > Settings > Accessibility > “Get image descriptions from Google”

IMAGE-TO-TEXT

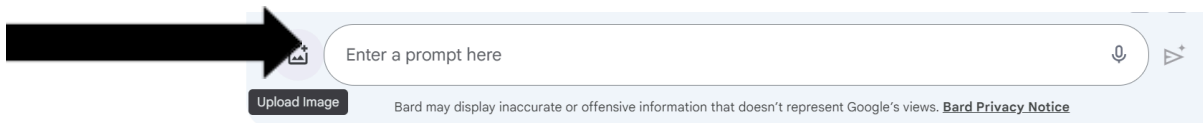
EDGE BROWSER:

- [Bing Chat](#) prompts will accept images; users can ask questions about the image (“describe this image for me,” “what does this image remind you of?”, “what can I use this image for?”, “what is going on in this photo?”, “what would good ALT text be for this image?”)



GOOGLE BARD:

- Bard prompts will accept images; users can ask questions about the image (“describe this image for me,” “what does this image remind you of?”, “what can I use this image for?”, “what is going on in this photo?”, “what would good ALT text be for this image?”)



TEXT-TO-SPEECH



Figure 3 Icons (left to right) for MS "Read Aloud" and "Immersive Reader" functionality.

EDGE BROWSER:

- Microsoft Edge’s “Read aloud” feature can be accessed via the keyboard shortcut: CTRL + SHIFT + U **OR** by a right mouse click on the page > “Read aloud” (this also applies for reading in-browser PDFs)
 - o To read a PDF in the Edge browser: right click on the PDF file > Open with > Edge Browser
 - o “Voice options” in the navigation bar allows English to be read with the accent of a non-native English speaker from various countries



Figure 4 Edge browser Read Aloud navigation bar.

- Microsoft Edge’s “[Immersive Reader](#)” “simplifies web page layouts, removes clutter, and helps you customize your reading experience” through tool bar features allowing for: reading content aloud, changing text appearance (font size, text spacing, font, text columns, page themes), and updating reading preferences (line focuses and translation)
 - o “Immersive Reader” functionality is activated via the F9 key **OR** by SHIFT + F9 key

- o If key strokes do not open the “Immersive Reader,” then add “read:” to the front of the URL and press ENTER



- o Click on the book icon (upper right-hand corner) to enter and exit the feature

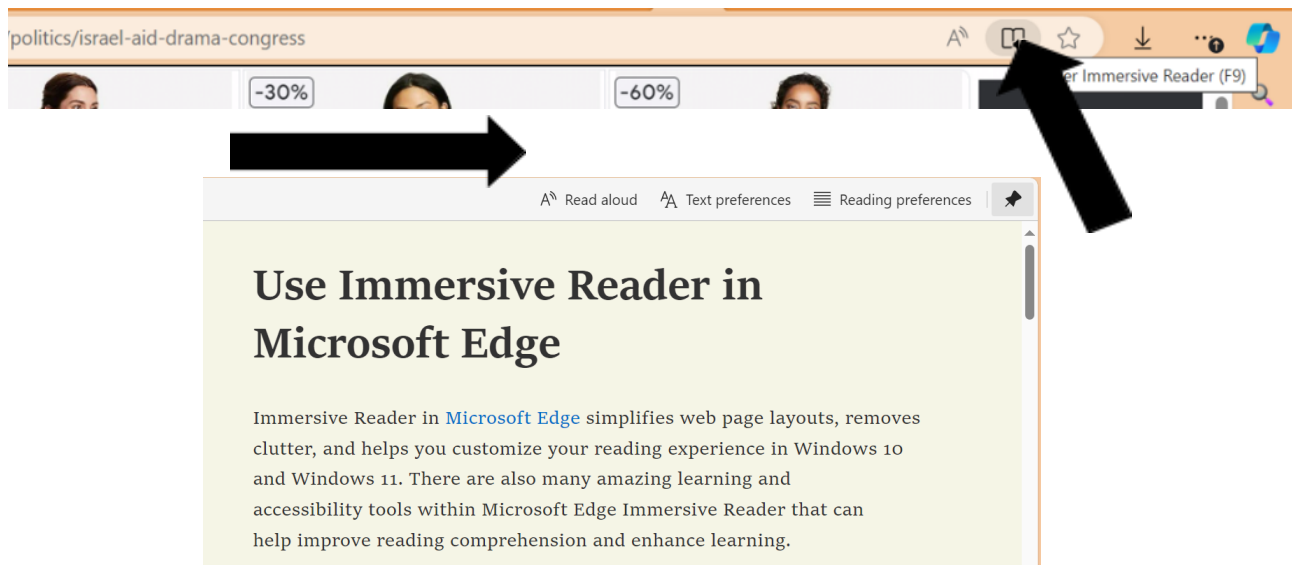
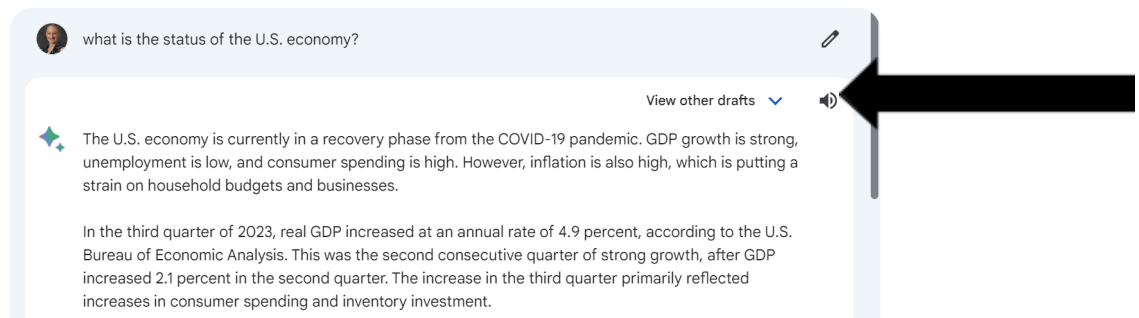


Figure 4 Immersive Reader toolbar in upper right-hand corner.

GOOGLE BARD:

- Bard prompt responses can be read aloud (without a Chrome extension) by clicking on the speaker icon

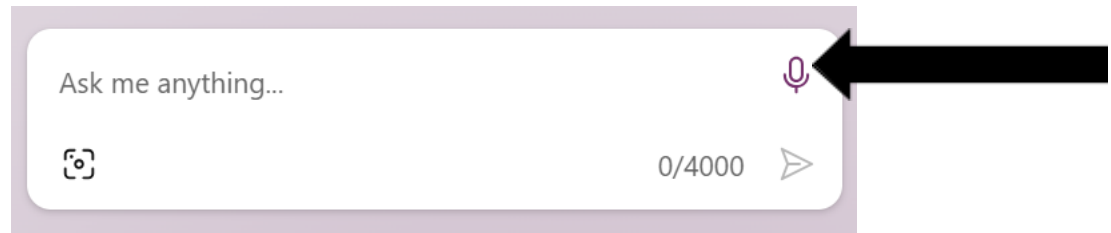


VOICE-TO-TEXT

Bing Chat, Google Bard, and Poe AI allow users to speak directly to the chat box to generate their queries instead of typing them. Click on the microphone icon to activate that feature.

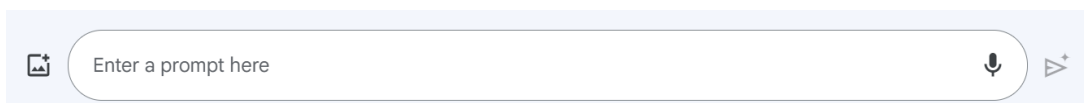
BING CHAT:

- Bing Chat supports English, French, German, Italian, Portuguese, Japanese, and Mandarin for both voice inputs (via microphone) and voice outputs
- Using voice inputs in Bing Chat triggers voice outputs



GOOGLE BARD:

- Bard says it recognizes 26 spoken languages via its microphone feature



[POE.AI:](#)

- Poe says it recognizes at least 20 spoken languages via its microphone feature

GENERAL ASSISTIVE FEATURES

EDGE BROWSER:

- To access Edge's general assistive features: horizontal three-dot icon > Settings > Accessibility
 - o Users can adjust browser settings to improve visibility, use, and keyboard navigation

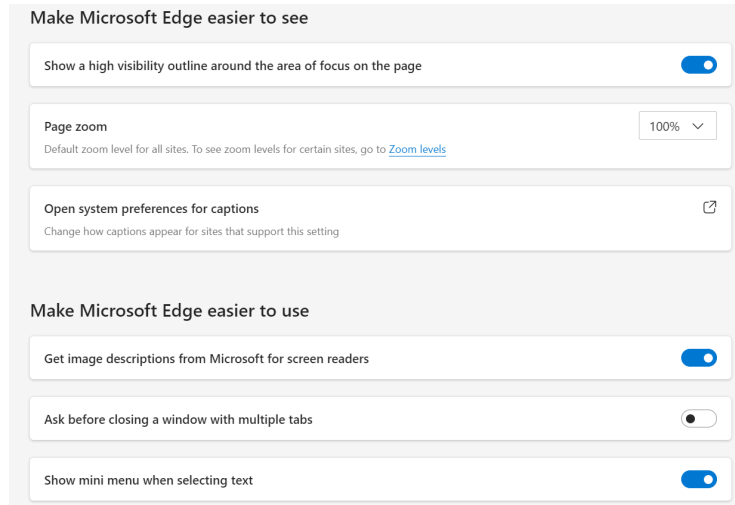


Figure 5 Edge browser accessibility settings.

GOOGLE CHROME:

- To access Chrome's general assistive features: vertical three-dot icon > Settings > Accessibility

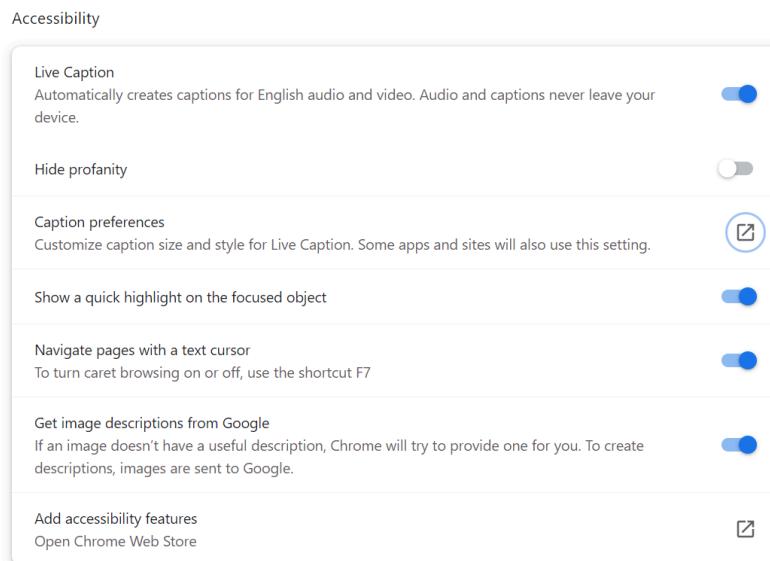


Figure 7 Chrome's accessibility features menu.

- o Users can adjust browser settings to provide captioning, navigation, and image information, as well as add more specialized accessibility features via Chrome extensions
- o Example: if “Live Caption” is selected, when Bard reads prompt responses aloud captions are automatically generated to accompany what is being said
 - “Live Caption” works outside of Bard (functionality varies due to the nature of the audio = captioning song lyrics is typically not successful, but captioning slower narration is)

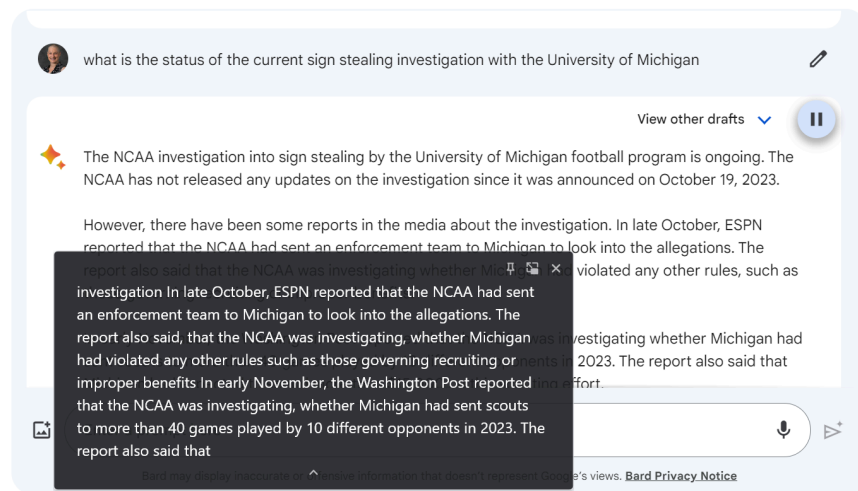


Figure 8 Real-time captioning of a Bard chat response as it's read aloud.