Chapter 5

Other Considerations for Video Accessibility

Though closed captioning, transcripts, and audio descriptions are important to the creation of accessible video content, they are not the only accessibility features that are relevant to this medium. This chapter discusses some other important considerations for ensuring that videos are accessible for all users.

Sign Language Interpretation

Another option for improving accessibility in a video is providing sign language interpretation. There can be several reasons why this approach is preferable to captions or transcripts in at least some situations. First, in the case of American Sign Language (ASL), it can provide greater access than English captions or transcripts. ASL is its own separate natural language with a syntax and grammar different from English. This means that a D/deaf viewer may be fluent in ASL, but may not be as comfortable reading English captions, particularly at the speed required to follow a video. Second, including professional ASL interpretation can seamlessly convey tone and inflection in a way that is more difficult and awkward in captions. Finally, in some cases, particularly live streaming events, a professional ASL interpreter could provide more accessible real-time interpretation of the event than would live captioning, particularly if an automatic transcription or captioning tool was being used instead of a stenocaptioner.

When considering professional sign language interpretation, there are a few best practices to keep in mind:

- Even if auto-captions are available for an online event, it is helpful to offer a process for requesting sign language interpretation in advance. If this option is offered, it is important to have clear instructions on how to place such a request and a deadline that leaves enough time to schedule a professional interpreter.
- Following along from that first point, it is important to schedule an interpreter far in advance of the event so that it is possible to find a qualified interpreter; leaving this to the last minute prior to the event may result in inadequate services.
- If the event is presented live to an audience (for example, in an auditorium) in addition to being streamed for online viewing, ensure that the interpreter is clearly visible in the recording. When possible, it can be worth devoting a separate camera to the interpreter when the interpretation will be included in a recording.
- When the event will be purely online, the placement of the interpreter is still vital. Typically, online event systems such as videoconferencing tools will offer the option to have a separate video for the interpreter. It is important to ensure that the captions and comments boxes, if any, do not obscure the view of the interpreter.
- Keep in mind that most events will be long enough to require team interpretation, which means that multiple interpreters will work in shifts of a set time.
- When designing recorded video content, consider whether there are options for creating videos with sign language instead of or in addition to captions. For example, some institutions offer recordings of sign language tours to expand access.

While sign language interpretation is often seen as unnecessary when captions are provided, in reality it offers another access point that can improve accessibility for many viewers and also offers them a more welcoming experience. It is worth considering, particularly for live events, even if there are plans in place to offer captions.

Flashing Elements in Video and Photosensitive Epilepsy

Another aspect of accessibility that impacts videos as well as animations is the restriction against flashing elements, which may trigger photosensitive epileptic seizures or other physical reactions in users. These reactions can be caused both by flashing light and by patterns that consist of high contrast light and dark elements. With respect to patterned elements, the reaction is typically caused when the patterns are flashing or moving rapidly. Though this is not a common issue, it does happen even in commercial media. For example, in 2018, Pixar re-edited *The Incredibles 2* after receiving reports that some scenes featuring strobe and flashing lights might cause issues for viewers with photosensitive epilepsy.

For the approximately one in every 4,000 people in the population who have photosensitive epilepsy, flashing elements can cause seizures.[1] Even for viewers who do not have photosensitive epilepsy, these elements can sometimes cause negative reactions, from disorientation or general discomfort to nausea and vertigo, making for an unpleasant viewing experience. This makes it imperative that videos be screened for this content and a warning be offered to viewers, ideally in multiple places, such as the text surrounding the video online, the metadata for the video, and on screen in the video. It is important to make sure that any in-video warning appears before the first instance of the flashing element.

The factors that are important in determining whether video elements will be an issue are the rate of the flashes, the amount of the screen that features the content in question, and, particularly in the case of patterns, the contrast between the elements. WCAG 2.1 has two Success Criteria related to this issue that explain what is required for safe online content:

- Success Criterion 2.3.1, which is required for Level A compliance, states, "Web pages do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds."
- Success Criterion 2.3.2, which is required for Level AAA compliance, states, "Web pages do not contain anything that flashes more than three times in any one second period."[2]

The process of evaluating videos for problematic content can be at least partially automated, and a tool for that process is discussed in the next chapter.

Media Player Accessibility

Even if the video itself is made accessible, the content can still be completely inaccessible to users if the media player used to display the content is inaccessible. This fact makes it important to focus on selecting a video player that works well for all users. Not all of the tools commonly available offer full accessibility, so it is important not to assume that a tool will be accessible without careful consideration. While it is, of course, possible to code an accessible media player, there are also a number of different accessible media players that are open source or free, so advanced programming skills are not necessary to offer an accessible video experience. The next chapter will include details on some of these accessible media players.

For those evaluating media players, there are some accessibility features to pay particular attention to:

- Whether the video autoplays without user input. Videos should not play automatically because this can be an accessibility issue, particularly for users who may not know where the audio is coming from, such as blind users. At a minimum, the media player should offer an option to disable autoplay.
- The option to turn captions on and off and, ideally, customize the display of the captions.
- The option to turn audio descriptions on and off.
- Transcripts should be available in an accessible manner, regardless of whether they are interactive or not.
- Transcripts should be searchable and, ideally, crawlable by search engine. Crawlability is not necessary for access to the video content itself, but it will simplify the process of searching for relevant videos that are accessible.
- All controls for the media player should be able to be used through keyboard commands and voice input so that they are usable by those who do not use a mouse. Ideally, they should be optimized to support this use, including features such as a visual and/or audio indication of which element has keyboard focus at any given time.
- All controls for the media player should be large enough that they can be comfortably clicked on by mouse users without requiring high levels of manual dexterity.
- There should be no "keyboard traps," meaning that users who navigate via keyboard should always be able to navigate away from any elements, including controls and interactive content.
- The elements of the media player should be labeled appropriately and of visually high contrast.
- The speed of the video should be customizable for those who require or prefer slower or faster speeds to support comprehension.

Evaluation of media players is important regardless of whether the evaluation pertains to an application

used to embed videos into websites, a platform for hosting videos, or a database or other proprietary platform that includes videos.

Designing Accessible Video Content

When creating video content, it is important to also keep in mind how design choices within the video content can impact accessibility. Many of these features are similar to those that make all kinds of designs accessible, but it can be easy to overlook them when creating video content. It is important to integrate accessibility considerations into the process of creating video to ensure that it will be accessible to all. One should remember the following:

- Lighting is important. Scenes that are too dimly lit can be inaccessible to those with low vision and generally difficult for all users, depending on the lighting where the video is watched (for example, glare when watching content outdoors).
- Contrast matters in video just as it does in print media and online. This issue can be related to lighting, but it is worth pointing out that contrast is also important when the video includes text on a background, such as when a slide presentation is displayed.
- Elements should be large enough to be clear. Small text or tiny details may not be viewable to those with low vision or when the video is displayed at certain sizes (for example, on mobile devices).
- Color should not be used as the sole way to convey information in the video as it can exclude those who are color-blind.
- Certain motion techniques and effects should be used cautiously. Parallax scrolling, 3-D effects, and other motion effects can cause discomfort for some users who have vestibular sensitivity. These users may experience dizziness, motion sickness, or nausea in extreme situations. For this reason, it is worth considering testing with users when employing these types of effects.
- Fonts should be selected for accessibility and easy readability, which generally means avoiding decorative fonts that are more difficult to read due to their design features.

Keeping these factors in mind when creating video content will help make sure it is effective and engaging for all users. These accessibility features will help to meet the needs of a wide range of potential users, which will expand the audience of users for the videos and ensure that all viewers are able to access the videos and the information being conveyed within them.

Notes

1. G. F. A. Harding and P. F. Harding, "Photosensitive Epilepsy and Image Safety," *Applied Ergonomics* 41, no. 4 (2010): 504–8.
2. Andrew Kirkpatrick, Joshue O Connor, Alastair Campbell, and Michal Cooper, eds., "Web Content Accessibility Guidelines (WCAG) 2.1," W3C, June 5, 2018, https://www.w3.org/TR/WCAG21.