

Welcome to the Accessible Technology Webinar Series

The Accessible Technology Webinar Series is sponsored by the Great Lakes ADA Center and the Pacific ADA Center, both members of the ADA National Network.

The Session is Scheduled to begin at 1:00 pm Central Time

We will be testing sound quality periodically

The content and materials of this training cannot be used or distributed without permission. This training is funded under award #H133A060097 from the U.S. Department of Education through the auspices of the National Institute on Disability and Rehabilitation Research (NIDRR). For permission to use training content or obtain copies of materials used as part of this program please contact us by email at adata@adagreatlakes.org or toll free (800) 949-4232 (V/TTY) in IL, IN, MI, MN, OH, and WI. For other all other states call (312) 413-1407



1

Webinar Features

- **Closed captioning** – click **CC** icon (top of screen) or control-F8 and adjust your screen
- **Questions** - type and submit questions in the Chat Area Text box or press control-M and enter text in the Chat Area
- Please do not use emoticons or hand-raising features during this session



2



How to Create Accessible Video

Terrill Thompson
DO-IT, University of Washington
tft@uw.edu
[@terrellthompson](https://twitter.com/terrellthompson)
<http://terrellthompson.com>



3

My Projects



- “Disabilities, Opportunities, Internetworking, & Technology”
<http://uw.edu/doit>



- Working to increase the participation of people with disabilities in computing fields.
<http://uw.edu/accesscomputing>

4

Making Video “Accessible” to whom?

- People who can’t hear audio content
- People who can’t see visual content
- People who can’t see or hear the content
- People who can’t use a mouse
- People who need to find specific content within a video or collection of videos
- People who don’t understand the language spoken in a video



5

Accessibility Solution #1: Captions

- Spoken audio appears as text
- Benefits people who are unable to hear the audio
- Benefits anyone who benefits from multimodal sensory input
- Can be searched (if CC)
- Can be automatically translated into other languages (if CC)



6

YouTube supports all of this



7

Closed vs. Open

- Closed = Contained in a separate track/file
- Advantages
 - The user can toggle on/off
 - The user can control how captions are displayed (if player supports this)
 - Captions can be searched, translated, & easily edited



8

Open vs. Closed

- Open = Mixed/burned into the video
- Advantages
 - Care can be taken to produce good quality, perfect positioning and contrast
 - Always on; the user can not turn off
 - May help users who wouldn't otherwise look to turn on captions, or know how to do so
 - Will never be separated from the video if video is moved or distributed



9

How to Add Captions

1. Create a transcript
2. Divide the transcript into caption-sized segments (optional, depending on choice of tool in #3)
3. Use a captioning tool to timestamp the caption-sized segments
4. Save to an output file that is appropriate for your media type



10

Captioning Tools

- Free Software
 - [MAGpie](#) (Win & Mac), [SubTitle Workshop](#) (Win), [World Caption](#) (Mac), [CapScribe](#) (Mac)
- Commercial Software
 - [HiCaption](#) (Win), [MovCaptioner](#) (Mac)
- Free Online Tools
 - [dotSub](#), [Subtitle Horse](#), [CaptionTube](#)
- See my blog:
[Free Tools For Captioning YouTube Videos](#)



11

dotSub.com



12

Semi-Automatic Captioning Tools

- Upload a transcript, automatically convert that it into captions:
 - YouTube
 - Caption Sync
<http://automaticsync.com/captionsync/>
 - 3PlayMedia
<http://www.3playmedia.com>
 - Docsoft
<http://www.docsoft.com>



13

Flavors of Closed Captions

- Quicktime – SMIL, with captions in qt.txt
- Real – SMIL, with captions in rt.txt
- Windows – SAMI
- YouTube - SubRip
- Apple i* - Scenarist Closed Caption (SCC)
- W3C standard: Timed Text (XML format)
- New HTML5 draft standard: WebVTT



14

Example SubRip File (for YouTube)

```
00:00:10.376  
[Sheryl] Hi, I'm Sheryl Burgstahler, director of the DO-IT programs  
  
00:00:14.116  
at the University of Washington in Seattle.  
  
00:00:17.036  
There are thousands of students on this campus, and some of them have disabilities  
that at one time would have blocked them from academic achievement.  
  
00:00:21.376  
Attitudes have changed, career  
and school opportunities have changed, even the law has changed.  
  
00:00:26.976  
What hasn't changed is that all students need academic and career skills,  
self-confidence,
```



15

Example W3C Timed Text file

```
<?xml version="1.0" encoding="UTF-8"?>
<tt xml:lang="en" xmlns="http://www.w3.org/2006/04/ttaf1" xmlns:tts="http://www.w3.org/2006/08/ttaf2" >
  <head>
    <styling>
      <style id="1" tts:textAlign="center" tts:color="#FFFFFF" tts:backgroundColor="black" />
    </styling>
  </head>
  <body>
    <div xml:lang="en" style="1">
      <p begin="00:00:10.37" dur="00:00:03.74">[Sheryl] Hi, I'm Sheryl Burgstahler
      <p begin="00:00:14.11" dur="00:00:02.92">at the University of Washington in
      <p begin="00:00:17.03" dur="00:00:04.34">There are thousands of students on
      <p begin="00:00:21.37" dur="00:00:03.90">that at one time would have blocked
      <p begin="00:00:25.17" dur="00:00:01.90">attitudes have changed, career</p>
      <p begin="00:00:26.97" dur="00:00:04.22">and school opportunities have<br/>
      <p begin="00:00:31.19" dur="00:00:05.98">What hasn't changed is that all stu
      <p begin="00:00:37.17" dur="00:00:02.69">self-advocacy skills, and determina
      <p begin="00:00:39.86" dur="00:00:04.52">[Sheryl] Since 1992, DO-IT<br/>has
      <p begin="00:00:44.38" dur="00:00:04.51">proven practices to help students w
      <p begin="00:00:48.89" dur="00:00:03.23">Now we'd like to share with you<br/>
      <p begin="00:00:52.12" dur="00:00:07.75">We'll show you what we do and how w
      <p begin="00:01:14.07" dur="00:00:03.00">[Sheryl] Through our DO-IT Scholars
```

WebVTT Format

- “Web Video Text Tracks”
- Originally based on SubRip format (*.srt), but has been extensively extended
- The draft WHATWG spec: <http://www.whatwg.org/specs/web-apps/current-work/webvtt.html>
- Understanding WebVTT: <http://www.delphiki.com/webvtt/>



17

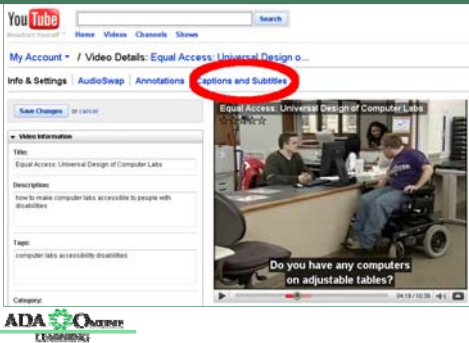
WebVTT Example

- 1
00:00:10,376 --> 00:00:14,115
Hi, I'm Sheryl Burgstahler, director of the DO-IT programs
- 2
00:00:14,116 --> 00:00:17,002
at the University of Washington in Seattle.



18

Uploading Captions to YouTube



19

Adding Closed Captions for Apple i*

- iPhones and iPods support closed captions via .scc format
- Requires many steps, either in:
 - Apple Final Cut Pro (\$999)
 - Apple QuickTime Pro (\$30), Mac version only
- “Creating Accessible iTunes U Content” (NCAM) <http://ncam.wgbh.org/about/news/creating-accessible-itunes>



20

Scenarist Closed Caption (.scc)

```
Scenarist_SCC V1.0
00:00:00:12 94ae 94ae 9420 9420 94d0 94d0 942c 942c 942f 942f
00:00:00:12 942c 942c
00:00:00:12 94ae 94ae 9420 9420 94d0 94d0 5b20 6d75 73e9 e320 5d80
942c 942c 942f 942f
00:00:09:04 942c 942c00:00:09:04 94ae 94ae 9420 9420 94d0 94d0 942c
942c 942f 942f
00:00:09:04 942c 942c00:00:09:04 94ae 94ae 9420 9420 94d0 94d0 5b6e
61f2 f261 f4ef f25d 20d9 ef75 20f7 616e f4bf f468 e573 e520 70e5 ef70
ece5 ae80 942c 942c 942f 942f
```



21

Sample Closed Captioned Video on iPhone



Video clip compliments of NCAM:
<http://ncam.wgbh.org/mm/samples.html>

22

Sample Open Captioned Video on iPhone



23

Making Video "Accessible" to whom?

- People who can't hear audio content ✓
- People who can't see visual content
- People who can't see or hear the content
- People who can't use a mouse
- People who need to find specific content within a video or collection of videos ✓
- People who don't understand the language spoken in a video ✓



24

Accessibility Solution #2: Audio Description

- A narrative track, describes any visual content that isn't communicated to users without sight
- Can be either open or closed
- Closed audio description can be either
 - Recorded audio, synchronized with video
 - Time-stamped text, to be read with synthesized speech



25

“Audio Description” is also known as

- Video description
- Descriptive Video™
- Descriptive narration
- Described video
- Description



26

How to *avoid* audio description

- Assure that all important information is communicated visually *and* audibly
- If video is a lecture, work with lecturers to help them be mindful that not everyone in the audience can see. Applies broadly:
 - Live lectures, people in the back can't see
 - Audio-recorded lectures, nobody can see
 - Video-recorded lectures, many people can't see



27

How to *add* Audio Description

- Step 1: Carefully script audio description
 - Choose words carefully so as not to distort the message
 - Find suitable moments for inserting audio (avoid conflicts with existing dialog or important sounds)



28

How to *add* Audio Description (cont.)

- For recorded description:
 - Step 2: Record audio description
 - Step 3a (for closed description): Save as audio file. Let the media player sync it with the video.
 - Step 3b (for open description): Save as audio file, then mix into program audio & re-encode video



29

How to *add* Audio Description (cont.)

- For text-based audio description:
 - Step 2: Type and time-stamp audio description using the same tools and techniques as with closed captions
 - Step 3: Export to format supported by your player



30

Support for audio description

- JW Player
 - <http://www.longtailvideo.com/players>
 - Supports mp3 file
- HTML5
 - <track kind="description">
 - Currently supports text as WebVTT
- NCSU proof-of-concept:
 - <http://bit.ly/kxpz3b>



31

Speaking of HTML5, video doesn't get much easier...

```
<video src="myvideo.mp4">  
</video>
```



32

HTML5 Accessible Video

```
<video controls tabindex="0" id="video">  
  <source src="myvideo.mp4">  
  <source src="myvideo.webm">  
  <track kind="captions" src="mycap.vtt">  
  <track kind="descriptions" src="mydesc.vtt">  
  <!-- fallback content goes here -->  
</video>
```



33

Closed Audio Description Not Quite There Yet

- Volume control (program audio vs. narration)
 - JW Player uses “ducking” (program audio gets softer whenever audio description is present)
- With text-based narration, speed of screen reader affects synchronization
- Some videos need “extended audio description” (pausing the video until narration finishes)



34

How DO-IT Does Video

- Start with a script (minimizes cost of transcription)
- Describe visual content in program audio (minimize need for audio description)
- Outsource both captions & description
- Deliver two versions of video (with and without audio description)
- Use audio described version on YouTube



35

Making Video “Accessible” to whom?

- People who can't hear audio content ✓
- People who can't see visual content ✓
- People who can't see or hear the content
- People who can't use a mouse
- People who need to find specific content within a video or collection of videos ✓
- People who don't understand the language spoken in a video ✓



36

Accessibility Solution #3: Choose an Accessible Media Player

- Does it support closed captions?
- Does it support audio description?
- Can captions be customized by the user?
- Is it accessible by keyboard? If not, does it have an API that allows control via HTML?
- Are the buttons and controls accessible to screen reader users?
- Does it support scrubbing to a new start time (e.g., for caption search)?



37

Some pretty accessible players

- JW Player (the only player that supports audio description)
- Ohio State University JW Player Controls <http://wac.osu.edu/examples/jwpc/>
- YouTube player (the latest version)
- NCAM ccPlayer http://ncam.wgbh.org/invent_build/web_multimedia/tools-guidelines/ccplayer



38

HTML5 video has potential too



39

Making Video “Accessible” to whom?

- People who can't hear audio content ✓
- People who can't see visual content ✓
- People who can't see or hear the content
- People who can't use a mouse ✓
- People who need to find specific content within a video or collection of videos ✓
- People who don't understand the language spoken in a video ✓



40

Accessibility Solution #4: Provide a transcript

- Not a *substitute* for captions, but a *supplement* to captions
- Benefits people who can neither hear the video nor see the captions
 - People who are deaf-blind
 - People with slow Internet connections
 - People with other technology limitations
- Benefits busy people who want info quickly



41

Making Video “Accessible” to whom?

- People who can't hear audio content ✓
- People who can't see visual content ✓
- People who can't see or hear the content ✓
- People who can't use a mouse ✓
- People who need to find specific content within a video or collection of videos ✓
- People who don't understand the language spoken in a video ✓



42

What about people who don't understand written language?

- Some users only understand sign language
- There are several examples of videos that have embedded sign language interpreters
- WCAG 2.0 SC 1.2.6 Sign Language (Prerecorded): Sign language interpretation is provided for all prerecorded audio content in synchronized media. (Level AAA)

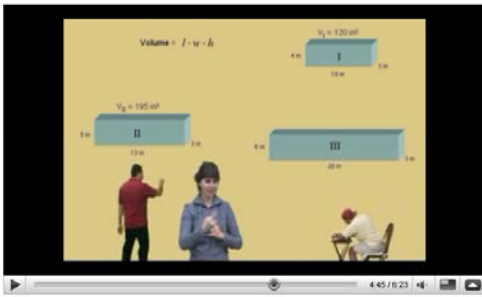
Example using a custom JW Player



creaturesdiscomforts.com



youtube.com/user/MuchoMath



46

Implementing Accessible Video in Your Organization

- Empower the infrastructure
 - Who creates multimedia?
 - Who provides streaming services?
 - Who offers relevant training and support?
- Document a procedure.
- Identify responsible parties.
- Include accessibility in all media discussions.
- Collaborate. Negotiate bulk pricing for transcribing and/or captioning services.



47

Remember all those beneficiaries

- Individuals with a wide range of abilities
- People who need to search your video content
- People who don't understand the language spoken in your videos
- People who don't have sufficient Internet bandwidth
- People who are busy



48

Where to Learn More

- DO-IT Video
<http://uw.edu/doit/video>
- My blog
<http://terrilthompson.blogspot.com>
- My 5-minute video on creating an accessible HTML5 media player:
<http://terrilthompson.com/video/html5>



49

Questions

You May Type and Submit questions in the Chat Area Text Box or press Control-M and enter your question in the Chat Area



50

Thank You

- Thank you for participating in today's session.
- Please Evaluate the session at:
<http://ada-conferences.July122011.sgizmo.com>
- Please Join Us for the Next Session
- September 13, 2011
- Titled "Introduction to Mobile Computing"



51
