



# Video Accessibility

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# Video @ the University of Washington

- 1500 videos produced by UWTV
- 3500 Research Channel videos (hosted at UW)
- 600 videos in 25 accounts or channels on YouTube (excluding athletics & student radio)
- 1000 videos in 12 categories on iTunes U
- 44 courses videotaping all their lectures
- 37 courses audio recording or screencasting

# Video: Inaccessible to whom?

- People who are unable to hear the audio
- People who are unable to see the video
- People who are unable to do either
- People who are unable to operate the player controls
- People who need to search video content

# Agenda

- Adding Captions
- Adding Audio Description
- Adding Sign Language
- Accessible Media Players
- Implementing Accessible Video in Your College or University

# 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

# Captioning Tools

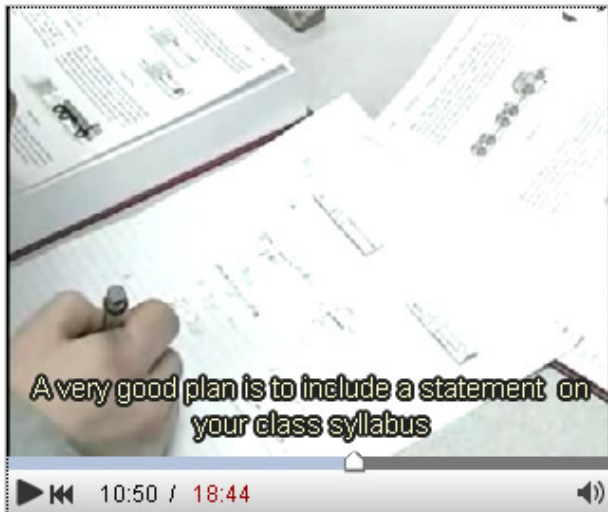
- Free Software
  - [MAGpie](#) (Win & Mac), [SubTitle Workshop](#) (Win), [World Caption](#) (Mac), [CapScribe](#) (Mac)
- Commercial Software
  - [HiCaption](#) (Win), [MovCaptioner](#) (Mac)
- Free Online Tools
  - [dotSub](#), [Subtitle Horse](#), [CaptionTube](#)
- See my blog:  
[Free Tools For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

# dotSub.com

Welcome to dotSUB - Any Video Any Language

## Transcribe Invisible Disabilities and Postsecondary Education

[Click here to watch a tutorial on transcribing videos](#)



- 10:10 specific chemicals.
- 10:18 Students with disabilities have the right to confidentiality.
- 10:20 If a student appears to be struggling in class but hasn't requested accommodations
- 10:25 the professor is not advised to ask if a disability is involved.
- 10:29 But there are acceptable ways to offer assistance.
- 10:39 A very good plan is to include a statement on your class syllabus

### Keyboard Shortcuts

Toggle Play / Pause	CTRL + SHIFT + P
Seek Ahead +1 Second	CTRL + SHIFT + →
Seek Back -1 Second	CTRL + SHIFT + ←
Set Caption Start Time	CTRL + SHIFT + ↑
Set Caption End Time	CTRL + SHIFT + ↓

### Add a transcription line

10 : 54  
10 : 57



♪ 🎵 ® © ™ £ ¥ € ¼ ½ ¾

# Semi-Automatic Captioning Tools

- Upload a transcript, automatically convert that it into captions:
  - YouTube
  - [Caption Sync](#) (Automatic Sync Technologies)
  - [Docsoft](#)



# Flavors of Closed Captions

- Quicktime – SMIL, with captions in qt.txt
- Real – SMIL, with captions in rt.txt
- Windows – SAMI
- YouTube – SubRip, SubViewer
- W3C Timed Text - Distribution Format Exchange Profile (DFXP)
- Apple i\* - Scenarist Closed Caption (SCC)

# Synchronized Multimedia Integration Language (.smil)

```
<?xml version="1.0" encoding="UTF-8"?>
<smil xmlns:qt="http://www.apple.com/quicktime/resources/smilextensions"
      xmlns="http://www.w3.org/TR/REC-smil" qt:time-slider="true" qt:autoplay="true">
  <head>
    <layout>
      <root-layout height="335" width="330" background-color="black"/>
      <region height="240" width="320" background-color="black" left="5" top="5" fit="meet" id="video"/>
      <region height="80" width="320" background-color="#000000" left="5" top="150" id="captions"/>
    </layout>
  </head>
  <body>
    <par>
      <video region="video" src="rtsp://media-qt.cac.washington.edu/wtsens.mov"/>
      <textstream region="captions" src="http://www.washington.edu/doi/Video/Captions/QT/wtsens.qt.txt"/>
    </par>
  </body>
</smil>
```

# QuickTime Text (qt.txt)

```
{QTtext}{timescale:100}{font:Verdana}  
{backColor:0,0,0}{textColor:65280,65280,65280}  
{width:320}{justify:center}{plain}
```

[00:00:11.046]

(Matthew) I'm concerned about going to college,

[00:00:13.726]

about access, wheelchair access.

[00:00:17.066]

How will I get around campus?

# SubViewer (.sub, .sbv)

00:00:21.526,00:00:26.106

(Narrator) Lindsay's a high school sophomore, but she's already thinking about career options.

00:00:26.106,00:00:29.876

(Lindsay) Science and math are probably what I would want to go into, as a, you know,

00:00:29.876,00:00:31.886

a career, when I'm out of college.

# SubRip (.srt)

1

00:00:17,000 --> 00:00:17,957

A generation ago,

2

00:00:17,957 --> 00:00:21,396

personal computers began  
to make their mark on the world.

3

00:00:21,396 --> 00:00:23,429

It was the beginning of  
an incredible change

# Synchronized Accessible Media Interchange (SAMI, .smi)

```
<SAMI>
<HEAD>
  <STYLE TYPE="text/css">
    <!--
      P {
        font-size: 14pt;
        font-family: Arial;
        text-align: center;
      }
      .Captions { Name: Captions; lang: EN_US_CC; SAMI_Type: CC;}
    -->
  </STYLE>
</HEAD>
<BODY>
<Sync Start=17000><P Class='Captions'>A generation ago, </p></sync>
<Sync Start=17957><P Class='Captions'>personal computers began<br>to make their mark on the world</p></sync>
<Sync Start=21396><P Class='Captions'>It was the beginning of<br>an incredible change</p></sync>
<!-- etc. -->
```

# W3C Timed Text DFXP (tt.xml)

```
<?xml version="1.0" encoding="UTF-8"?>
<tt xml:lang="en" xmlns="http://www.w3.org/2006/10/ttaf1"
    xmlns:tts="http://www.w3.org/2006/04/ttaf1#styling">
  <head>
    <styling>
      <style id="1" tts:textAlign="center" />
    </styling>
  </head>
  <body>
    <div xml:id="captions" xml:lang="en">
      <p begin="00:00:25.891" end="00:00:28.396">Your website's visitors aren't a faceless mass</p>
      <p begin="00:00:28.396" end="00:00:31.363">of identical mouse-clickers, but a vibrant community</p>
      <p begin="00:00:31.363" end="00:00:31.363">of individuals with varying tastes, styles, and abilities.</p>

    <!-- etc. -->
  </div>
</body>
</tt>
```

# Uploading Captions to YouTube

The image shows the YouTube interface for editing video settings. At the top, the YouTube logo and navigation links (Home, Videos, Channels, Shows) are visible. The video title is "Equal Access: Universal Design of Computer Labs". The "Captions and Subtitles" tab is highlighted with a red circle. On the left, the "Video Information" section contains fields for Title, Description, Tags, and Category. The Title field contains "Equal Access: Universal Design of Computer Labs", the Description field contains "how to make computer labs accessible to people with disabilities", and the Tags field contains "computer labs accessibility disabilities". On the right, a video player shows a scene with a man in a wheelchair and another man at a computer desk. A subtitle at the bottom of the video reads "Do you have any computers on adjustable tables?". The video player shows a progress bar at 04:19 / 10:39.

**YouTube** Broadcast Yourself™ [Home](#) [Videos](#) [Channels](#) [Shows](#)

[My Account](#) / Video Details: [Equal Access: Universal Design o...](#)

[Info & Settings](#) | [AudioSwap](#) | [Annotations](#) | **[Captions and Subtitles](#)**

[Save Changes](#) or [cancel](#)

**Video Information**

**Title:**  
Equal Access: Universal Design of Computer Labs

**Description:**  
how to make computer labs accessible to people with disabilities

**Tags:**  
computer labs accessibility disabilities

**Category:**

Equal Access: Universal Design of Computer Labs  
☆☆☆☆☆

Do you have any computers on adjustable tables?

04:19 / 10:39



# Anyone for a Demo?



# 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>

# 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

# Sample Closed Captioned Video on iPhone



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

# Sample Open Captioned Video on iPhone



# Audio Description

- Various names:
  - Audio description
  - Video description
  - Descriptive Video™
  - Descriptive narration
  - Described video
- A separate narrative track, for people who can't see critical visual content

# 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

# How to *add* Audio Description

- 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)
- Record audio description segments
- Output 1: Remix audio track to include audio description
- Option 2: Save as audio file. Let the media player sync it with the video.



# DO-IT Video Search

- <http://washington.edu/doit/video/search>
- A demonstration project, showing:
  - The relationship between captions and search
  - Delivery methods for captions and audio description
  - Media player accessibility strategies

# Choosing a Media Player

- Does it support closed captions?
- Can captions be customized by the user?
- Does it support closed audio description?
- 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)?

# Example Media Players

- YouTube Player
- JW FLV Player
- NCAM ccPlayer
- HTML5 <video> Element

# JW FLV Player as used in DO-IT Video Search



Play/Pause

Stop

Vol +

Vol -

Mute

# Setting up JW FLV Player

```
<div id="video">
```

```
  Alternative content for those without Javascript
```

```
</div>
```

```
<script type="text/javascript">
```

```
  var sa = new SWFObject('player.swf','mpl','470','300','9');
```

```
  var flashvars = "file=doit.flv";
```

```
  flashvars += "&plugins=captions-1,audiodescription-1";
```

```
  flashvars += "&captions.file=doit.tt.xml";
```

```
  flashvars += "&audiodescription.file=doit.mp3";
```

```
  sa.addParam("flashvars",flashvars);
```

```
  sa.write('video');
```

```
</script>
```

# Video made simple: HTML 5

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

# Current Support (March 25, 2010)

- Firefox 3.6.2 supports <video> in OGG format
  - Can tab to video, and play/pause with space
- Opera 10.51 supports <video> in OGG format
  - Can tab to all controls, and operate 2/3 of them
- Safari 4 supports <video> in MP4 format
  - No obvious way to operate with keyboard
- Google Chrome 4.1 supports both OGG & MP4
  - No obvious way to operate with keyboard
- Controls not read by screen readers in any browser

# HTML 5 <video> Accessibility

- From the current HTML5 spec (<http://w3.org/TR/html5>):

**In particular, this content is not intended to address accessibility concerns. To make video content accessible to the blind, deaf, and those with other physical or cognitive disabilities, authors are expected to provide alternative media streams and/or to embed accessibility aids (such as caption or subtitle tracks) into their media streams.**

- Stay tuned:
  - <http://www.w3.org/html/wg/wiki/MultimediaAccessibility>



# Meanwhile...

- Can use Javascript to parse and display captions: <http://v2v.cc/~j/jquery.srt/>
- [Accessible HTML 5 Video with Javascripted Captions](#) (Bruce Lawson)

# And Don't Forget Sign Language

- 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)



This slide compliments of Andrew Kirkpatrick and Adobe, Inc.

creaturediscomforts.com



← Back



[youtube.com/user/MuchoMath](https://youtube.com/user/MuchoMath)

Volume =  $l \cdot w \cdot h$

$V_I = 120 \text{ in}^3$

4 in 10 in 3 in  
I

$V_{II} = 195 \text{ in}^3$

5 in 13 in 3 in  
II

6 in 28 in 3 in  
III

4:45 / 6:23

# Implementing Accessible Video in Your College or University

- Empower the infrastructure
  - Who creates multimedia?
  - Who provides streaming services?
  - Who offers relevant training and support?
  - Utilize student help
- Document a procedure. Identify responsible parties.
- Include accessibility in high-level digital media discussions

# Implementing Accessible Video (continued)

- Collaborate. Negotiate bulk pricing for transcribing and/or captioning services
- Play the universal design card:
  - Captioned video can be searched
  - Captioned video can be translated into other languages during playback