



# Video Accessibility

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# 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

# Captions 101

- **Captions** provide a text equivalent for any audio content within a multimedia presentation. This makes the presentation accessible to someone who is unable to hear the audio.
- Open captions are integrated into the video stream, and can not be turned off. Result is one file: Easier to distribute.
- Closed captions exist in a separate track, and can be turned on or off. Result is searchable and display is customizable where supported. Distribution typically requires multiple files.

# The Closed Captioning Process

- Create a transcript
- Divide the transcript into caption-sized segments
- Use a captioning tool to timestamp the caption-sized segments
- 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](#)
- My blog: [Free Tools For Captioning YouTube Videos](#)

# Agenda

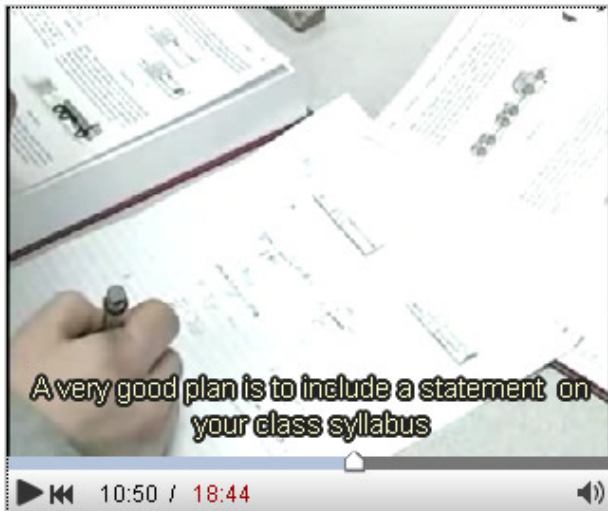
- Overview of Video Accessibility
- Captioning Video
- Adding Audio Description
- Adding Sign Language
- Media Players
- Implementing Accessible Video in Your College or University

# dotSub.com

Welcome to dotSUB - Any Video Any Language

## Transcribe Invisible Disabilities and Postsecondary Education

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



### 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 + ↓

10:10	specific chemicals.
10:18	Students with disabilities have the right to confidentiality.
10:20	
10:20	If a student appears to be struggling in class but hasn't requested accommodations
10:25	
10:25	the professor is not advised to ask if a disability is involved.
10:29	
10:29	But there are acceptable ways to offer assistance.
10:33	
10:39	A very good plan is to include a statement on your class syllabus
10:54	

### Add a transcription line

10 : 54  
10 : 57



♪ 🎵 ® © ™ £ ¥ € ¼ ½ ¾

# 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)

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. -->
```

# SubViewer (.sub)

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.

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

# 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

# Closed Captioning Video for Apple i\*

- Requires many steps, either in:
  - Apple Final Cut Pro (\$999)
  - Apple QuickTime Pro (\$30), Mac version only
- Closed captions can be turned on/off (good) but are not very attractive (open captions may be a better option for now)

# Sample Closed Captioned Video on iPhone



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

# Sample Open Captioned Video on iPhone



# Playing Captioned Videos: SMIL

- `<a href="doit.smil">Quicktime video</a>`

# Playing Captioned Videos: Windows

- `<a href="doit.asx">Windows video</a>`
- Contents of `doit.asx`  
(Windows Media reference file):

```
<asx version="3.0">
```

```
  <entry>
```

```
    <ref href="mms://doit.wmv? sami=doit.sami" />
```

```
  </entry>
```

```
</asx>
```

# Uploading Captions to YouTube

The image shows the YouTube video settings interface. 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. Below the navigation, there are buttons for 'Save Changes' and 'cancel'. The 'Video Information' section contains fields for Title, Description, Tags, and Category. The video player on the right shows a scene with a man in a wheelchair and another man at a computer desk, with a subtitle that reads 'Do you have any computers on adjustable tables?'.

**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

# Audio Description 101

- Audio description, video description, descriptive video, descriptive narration, described video (synonyms)
- A separate narrative track, for people who can't see critical visual content
- Can be avoided by assuring that all important information is communicated visually *and* audibly
- If needed, recording narrative segments can be synchronized with video using multimedia editing or captioning software

# The Audio Description Process

- Avoid the need for audio description where possible, by assuring that all important information is communicated visually *and* audibly
- 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.

# Closed Captions and Audio Description in JW FLV Player



# 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



# DO-IT Video Search **BETA**

Search the full text of DO-IT's video library:

Search

---

## List of Available Videos

Sort by:



### **Access to Technology in the Workplace: In Our Own Words**

(Nov 2003)

People with disabilities talk about their use of accessible technology in the workplace.



### **Building the Team: Faculty, Staff, and Students Working Together** (Nov 2000)

# Invisible Disabilities and Postsecondary Education



Play/Pause

Stop

Vol +

Vol -

Mute

Change player and controller options in  
[Preferences](#)

## Caption Now Playing:

**00:34** ...*And...it's cool...*

[Play video at this point](#) (click twice)

[Return to main page for this video](#)

## Transcript

*Over a blurry gray background showing students, photos of students with disabilities moving across the background include "Attention Deficit Hyperactivity Disorder" and "Health Impairments". A title reads, "Invisible Disabilities"*

**(Narrator)** Amrit has a disability. It's just not obvious. It's not anything to do with it.



Play/Pause   Stop   Vol +   Vol -   Mute

# Choosing a Media Player

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

# 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>
```

# Setting up NCAM CC 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>
```

# HTML 5 <video> Element

- Video is Simple!  
`<video src="myvideo.ogg"></video>`
- Already supported by some browsers, although there is dispute about which codec (ogg or h.264) to support
- Controls are not *yet* accessible to keyboard users or screen reader users
- No support in spec for captions or audio descrip.
- It's possible but it's not simple!

# HTML 5 <video> Element

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

**In particular, this content is not *fallback content* 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.**

- Get involved!
  - <http://esw.w3.org/topic/HTML/MultimediaAccessibility>

# 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 =  $l \cdot w \cdot h$

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

4 m 10 m 3 m  
I

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

5 m 13 m 3 m  
II

6 m 20 m 3 m  
III

4:45 / 6:23

# The State of Video Accessibility at the University of Washington (UW)

- 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

# 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. Negotiation 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

# Opportunities for Finding Solutions at Accessing Higher Ground

- Visit [DocSoft](#) in the exhibit area
- Friday 9:15-10:15 Roundtable discussion on Captioning/Transcription Solutions (Westminster 1/2)
- Saturday 8:30-9:30 In-house Captioning! American University (Windsor)
- Saturday 9:45-10:45 Stanford Captioning: A Workflow Model for Producing Captioned Media (Meadowbrook II)