



DO-IT Video Search: A Case Study in Accessible Multimedia

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<http://www.washington.edu/doit/video/search>



About DO-IT

- “Disabilities, Opportunities, Internetworking, and Technology”
- Goal: To increase the participation of individuals with disabilities in challenging academic programs and careers.
- 15 years of funding from NSF, US Dept of Ed, and other sources
- DO-IT has produced approximately 40 videos

Two Huge Problems with Video

- Video is not accessible to people who can't hear it.
- Solution: Captions.
- Video is not searchable (“I know I saw someone talking about that on some video or other...”).
- Solution: Captions.

More problems with Video

- Visual-only content is not accessible to people who can't see it.
- Solution: Audio description
- Video is not accessible to people with slow Internet connections
- Solution: Transcript
- Most web-based video players have little or no support for keyboard &/or screen reader users

How DO-IT Does Video

- Videos are produced for broadcast TV (UWTV, Research Channel, etc.)
- All videos start with a script (simplifies captioning, reduces cost)
- Videos are captioned by a third party
- Early videos were only open captioned, and closed captions had to be reproduced:
 - Automatic Sync Technologies
<http://www.automaticsync.com>
 - MAGPIE
<http://ncam.wgbh.org/webaccess/magpie>

How DO-IT Does Video (part 2)

- Captions are **open** for distribution on VHS/DVD
 - Allows **author** control of font size, display, positioning
 - Ensures accessibility for all users, even those who don't know how to turn it on or don't know they need it
 - Serves as an example, helps to promote captioning
- Captions are **closed** for distribution on-line
 - Allows videos to be searched
 - Allows **user** control of font size, display, positioning
 - Is easy to add-on or correct post-production

Open Captions and Modems



How DO-IT Does Video (Part 3)

- Videos are audio described by a third party
 - Two versions of videos are available: with and without audio description
 - Currently testing “closed audio description” for simplicity of production and delivery (one video for all users)
- Videos are digitally encoded for on-line delivery (as FLV, Quicktime, and Windows)
- Caption files are automatically parsed and added to database for searching
- Videos and captions are uploaded to YouTube

Flavors of Closed Captions

- Quicktime – SMIL, with captions in qt.txt
- Real – SMIL, with captions in rt.txt
- Windows – SAMI
- YouTube - SubRip
- W3C Timed Text - Distribution Format Exchange Profile (DFXP)

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

00:00:21.376

that at one time would have blocked them from academic achievement.

00:00:25.176

Attitudes have changed, career

00:00:26.976

and school opportunities have changed, even the law has changed.

00:00:31.196

What hasn't changed is that all students need academic and career skills, self-confidence,

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
<head>
  <styling>
    <style id="1" tts:textAlign="center" tts:color="#FFFFFF" tts:backgroundColor
  </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="00:00:03.80">that at one time would have blocked
    <p begin="00:00:25.17" dur="00:00:01.80">Attitudes have changed, career</p>
    <p begin="00:00:26.97" dur="00:00:04.22">and school opportunities have<br/>c
    <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
```

DO-IT Video Search

1. Extract captions into a database
2. Provide a user interface for searching the database
3. Provide a means of viewing videos clips, starting at the point in the video where search results are spoken.
4. Ensure that all of this is accessible.

Choosing a Media Player

- An *embedded* player is essential for our application.
- Flash is preferred (highly customizable, installed on 99% of desktops)
- Must support closed captions.
- Must support start time parameter.
- Must have an accessible interface.

JW FLV Player

- Supports closed captions
- Supports closed audio description
- Has an excellent API that allows developers to build custom controls using HTML/Javascript
 - Can control the video from outside of Flash
 - Can provide user control over caption font size
- Provides full keyboard and screen reader accessibility in *some versions* (the forthcoming version, 4.4, looks promising)



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 has nothing to do with it.



Play/Pause Stop Vol + Vol - Mute

WCAG 2.0 Challenges

- 1.2.8 Media Alternative (Prerecorded): An alternative for time-based media is provided for all prerecorded synchronized media and for all prerecorded video-only media.
- i.e., Include audio description in transcripts

More WCAG 2.0 Challenges

- 1.4.7 Low or No Background Audio:
[Paraphrasing:] For audio description...
 - **No Background:** The audio does not contain background sounds.
 - **Turn Off:** The background sounds can be turned off.
 - **20 dB:** The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds.

One Final WCAG 2.0 Challenge

- 1.2.6 Sign Language (Prerecorded): Sign language interpretation is provided for all prerecorded audio content in synchronized media.



This slide compliments of Andrew Kirkpatrick and Adobe, Inc.

creaturesdiscomforts.com



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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
12 in
3 in
II

6 in
20 in
3 in
III

4:45 / 6:23

Any Questions?

