# Providing Equity through Accessible Media: Excellence in Service Provision

### Cindy Camp Jason Stark

### [ccamp@dcmp.org](mailto:ccamp@dcmp.org) [jstark@dcmp.org](mailto:jstark@dcmp.org)

## The Described and Captioned Media Program

Our mission to promote and provide equal access to communication and learning through captioned and described educational media for students who are blind, visually impaired, deaf, hard of hearing, or deaf-blind.

The DCMP is an idea that works thanks to funding by the U.S. Department of Education and administration by the National Association of the Deaf.

## Guidelines for Captioning and Describing

* [http://www.captioningkey.org](http://www.captioningkey.org/)
* [http://www.descriptionkey.org](http://www.descriptionkey.org/)

## What Are Captions?

* Captioning is the process of converting the audio content of a video into text and displaying that text in sync with the audio.
* Captions are not only a textual equivalent of what is said but should also speaker identification, sound effects, and music description.
* <http://www.dcmp.org/caai/nadh32.pdf>

## Why Do We Need Captions?

Probably the main reason you are attending this presentation is because you are concerned about providing legally mandated access to D/HH students on your campus. However, it is important to realize that captions aren’t just for those with a hearing loss. They benefit everyone. Let’s look at a few of these additional benefits.

* Makes your video (and advertising) accessible to over 28 million Americans who are deaf or hard of hearing. Helps to meet regulatory compliance measures for governmental and educational institutions (e.g., “Section 508”).
* Promotes literacy for children and adults by strengthening reading speed, comprehension, spelling, and grammar skills.
* Improves clarity and comprehension of the sounds and dialogue, particularly when poor audio, heavy accents, background noises, and other such media elements are present.
* Allows individuals to follow along with the video dialogue even when they do not have access to sound on their PC or mobile device (e.g., in a noisy area with no headphones or when using devices with faulty or missing sound cards or drivers).
* Creates a complete text transcript of the video, which can be indexed by search engines to provide far more accurate search results than keyword tagging alone.
* Enables translation into multiple languages.

## The Captioning Process

The captioning process can be broken down into several basic steps. However, captioning is not always an easy process. It requires knowledge of technology and English grammar.

First you must create a verbatim transcript. It should include uhhs, umms, and misspeaks. It should be checked for spelling, especially technical terms and proper names. Adding proper punctuation can be tricky with normal conversation. These are all reasons why scripting a lecture before filming is helpful.

Then import your transcript into your preferred captioning software.

Next create grammatically correct line breaks. Each line should be no more than 32 characters, including spaces. Some captioning software allows you to set some parameters such as the number of characters per line and to follow punctuation as a guide for creating line breaks. However, it is important to have a live person review all line breaks.

Once captions are correctly broken up it is time to add time codes. The software will assist in this. Normally each caption is on a different line and you use keyboard commands to tell the software when a caption will start and end.

When the time coding is complete and has been checked for accuracy you can export the caption file to the final destination. If you are creating closed captions the caption file and the video file need to be saved in the same folder with the exact same name except for the file extension: Video1.mp4 and Video1.srt. Open captions do not have a separate file since the captions become part of the video.

## Transcript Standards

The captions are only as good as the initial transcript, so this is one place to focus on quality. The transcript should be verbatim. Sometimes the rate of speech will be too rapid to allow captions to remain on screen long enough to be easily read. In this case the captions maybe revised. It is more important that the captions remain on screen long enough to be readable rather than be verbatim. DCMP has done extensive research on presentation rate and a report can be found at: <https://dcmp.org/caai/nadh137.pdf#search=captioning%20presentation%20rate>.

Transcripts should include speaker identification. A preferred method is to position the captions on the screen to show who is speaking. However, most current online media players do not support this formatting. The options are to use open captions which become part of the video and will retain placement or to add text to identify the speaker.

Spelling, capitalization, and grammar must follow standard rules. Transcripts should be reviewed for technical terms and proper names. If you are outsourcing it is helpful to include a list of these words so that the captioning agency does not have to do the research, which can save you money.

The final captions should include sound effects either in a symbol or word. It is usually better to spell out words since most player do not support many symbols other than those on a standard keyboard and the single or double music note.

Be consistent throughout the captions. Some may choose to use { }. [ ]. Or ( ) to offset sound effects. All are acceptable but you should not switch between them.

## Captioning Software

* Free Download
  + [Subtitle Workshop](http://subworkshop.sourceforge.net/download.php)
  + [Aegisub](http://www.aegisub.org/)
  + [Jubler Subtitle Editor](http://www.jubler.org/)
  + [CADET](http://ncamftp.wgbh.org/cadet/)
* Free Online
  + [HTML5 Video Caption Maker](https://testdrive-archive.azurewebsites.net/Graphics/CaptionMaker/)
  + [Accessify](http://accessify.com/tools-and-wizards/accessibility-tools/easy-youtube-caption-creator/)
  + [Subtitle Horse](http://subtitle-horse.com/)
  + [dotsub](https://dotsub.com/)
  + [Amara](http://www.amara.org/en/)
* Fee based
  + [MovieCaptioner](https://www.synchrimedia.com/)
  + [CaptionMaker / MacCaption](https://www.telestream.net/captioning/overview.htm)
  + [Camtasia](https://www.techsmith.com/products.html)

## Automatic Speech Recognition Software

Another popular solution to captioning is voice recognition software. Some captioning agencies use voice recognition software to create transcripts and some institutions are trying to use voice recognition software to create transcripts in house. Before going either route you need to understand what the software is capable of doing and what it isn’t.

According to a white paper by [CaptionSync](http://www.automaticsync.com/captionsync/learn/research-closed-captioning/):

* Speech Recognition results are inaccurate, unreliable, and inconsistent – with error rates often exceeding 20%.
* 80 – 90% accuracy is simply inadequate for most applications.
* Accuracy below 97% is insufficient when comprehension is crucial.
* Transcripts with high error rates do not satisfy compliance with legal mandates.
* It costs more to edit speech recognition scripts than it does to use a professional transcriber to start with.

This does not mean speech recognition can’t be helpful but it cannot create an accurate transcript without editing. Currently there is not cheap and easy way to create fully accessible and accurate captions. Of course technology is always advancing. At some point in the future captions may be as easy as pushing a CC button. But for now we cannot assume that having words on the screen means equal access.

## Additional Software for Captioning

The captioning process can be cumbersome and time consuming. There are a few things that can make the process smoother. The first is transcription software such as [Express Scribe](http://www.nch.com.au/scribe/index.html). This software makes creating a verbatim transcript easier. It also works with a foot pedal. The foot pedal connects to your computer via USB and allows you to start, stop, and rewind a video without removing your hands from the keyboard. It can significantly increase productivity.

You may also want to invest in software that will convert video formats, since most captioning software only accepts a limited number video formats.

Additionally, you’ll want to look for software to convert caption file formats, the software will only create a limited number of caption formats.

The add on pieces are usually inexpensive but are very helpful to the process.

## What Are Descriptions?

Description is the verbal depiction of key visual elements in media and live productions. Also known as "audio description" or "video description," the description of media involves the interspersion of these depictions with the program's original audio.

<http://www.descriptionkey.org/index.html#1>

## Why Do We Need Descriptions?

Description is the key to opening a world of information for persons with a vision loss, literacy needs, or loss of cognitive abilities. The American Foundation for the Blind reports that [21.5 million adults have vision loss](http://www.afb.org/section.aspx?SectionID=15&TopicID=413&DocumentID=4900) and [94,000 children with a vision loss are being helped by some kind of special education](http://www.afb.org/section.aspx?SectionID=8). While description was developed for people who are blind or visually impaired, sighted children may also benefit from description’s concise, objective translation of media’s key visual components. Specialized learners, such as students with learning differences, English language learners, and children on the autism spectrum, benefit from its value in literacy development (e.g., vocabulary and reading) and content learning. [DCMP’s Listening Is Learning campaign focuses on these benefits](http://listeningislearning.org/background_description-no-bvi.html).

<http://www.descriptionkey.org/index.html>

## The Description Process

Describing video is even more complex than captioning. It is very much an art form, because the rules are not as clear cut as with captioning. With captioning you simply include all auditory information. With descriptions you have limited time so you must decide what visual information to include.

First it is important to review the video thoroughly several times to identify what visual information is missing from the dialogue and context clues. Next look at where there are gaps in the audio in which to insert description. Once you know both of these you can begin writing a script.

You must also choose appropriate voice talent to read the script. The voice should match the tone and mood of the video but not blend so much that it is indistinguishable from the narrator or characters. The voice should be clear, easy to understand, and free of stutters or errors. It can require several takes to get the perfect description track.

The next step is to combine the new audio track with the original. This can be done using a variety of video editing software. The sound quality and level should be consistent throughout. The viewer should not be able to tell that there are two separate audio tracks being combined.

## Description Methods

**Standard audio description**

Description is the verbal depiction of key visual elements in media and live productions. Also known as "audio description" or "video description," the description of media involves the interspersion of these depictions with the program's original audio.

<http://www.descriptionkey.org/index.html#1>

**Extended audio description**

When extended description (also called expanded description) is a technical option, provide description before the content rather than after. Extended description pauses the production automatically at certain points to allow for a more in-depth description of the content.

<http://www.descriptionkey.org/what_to_describe.html#5>

## Technical Methods

**Text based description**

This method of description works with accessible html 5 video players. It allows for the upload of a text file that contains description of the visual aspects of the video. The file is time coded so that a compatible screen reader will read the description track as the video plays.

**Secondary audio track descriptions**

This method of description uses video editing software to add a second audio track to an initial video. Since most online platforms do not support separate audio tracks, usually two versions of the video will need to be uploaded, one with and one without description.

## Description Software

* Free Download
  + [LiveDescribe](http://www.livedescribe.com/)
  + [CADET](http://ncamftp.wgbh.org/cadet/)
* Free Online
  + [LiveDescribe](http://www.livedescribe.com/)
  + [YouDescribe](https://youdescribe.org/)
* Fee based
  + [Camtasia](https://www.techsmith.com/products.html)

## Standards for Descriptions

**Accurate:** There must be no errors in word selection, pronunciation, diction, or enunciation.

**Prioritized:** Content essential to the intended learning and enjoyment outcomes is of primary importance.

**Consistent:** Both the description content and the voicing should match the style, tone, and pace of the program.

**Appropriate:** Consider the intended audience, be objective, and seek simplicity and succinctness.

**Equal:** Equal access requires that the meaning and intention of the program be conveyed.

<http://www.descriptionkey.org/quality_description.html>

## Audio Description Tips and Resources

Writing descriptions is an art form. You want to include as much information in as concise and descriptive a manner as possible. Not everyone will be able to do this well. Check with faculty on your campus. Creative writing and journalism classes are a good place to start. Some faculty may be interested in helping but they may also be willing to have a class assignment which could help you identify potential student workers.

The voice talent should have a clear and consistent voice, which matches the mood of the video but does not blend too much. Check with your drama department for faculty or students who could work with you. Another place to check is with communications, if you have a TV station on campus.

Recording the voice talent can be done without too much trouble but you need a good quality microphone and a quiet place. If your campus has a recording studio or TV station, this is idea. Often students are looking for projects especially in upper level classes.

Take advantage of the faculty and future professionals on your campus. If you have a clear idea of what is needed you can tap into these resources.

Check out the [American Council of the Blind’s](http://www.acb.org/adp/index.html) [audio description training](http://www.acb.org/adp/education.html) and a book by Joel Snyder, *The Visual Made Verbal*

## Producing Your Own Media

Making video accessible requires time and effort. You don’t want to put this much effort into something that you’ll only use once. Would you spend $100 on a pair of shoes you could only wear once? So why not put in a little more effort to create high quality video that will have a long shelf life?

Very few of us are good at speaking off the cuff. We will stutter, misspeak, back up and start over, even mispronounce words. If you script what you want to say and practice, your recorded lecture will sound more professional and is more likely to hold the audience’s attention. Trying to record a live lecture is rarely a good idea. Student who view the recording miss out on the live interaction and often become bored with all the extraneous comments that only pertain to the live classroom.

It is also a good idea to learn to describe any visuals that are used. For one this can eliminate the need to add post-production descriptions for the blind but it also enhances the lecture for everyone.

Ex. If you see on the screen 2 x (4 + 3) - 5 , this would need audio description to make it accessible to a person who is blind. But the teacher could say, "The equation is 2 times open parentheses 4 plus 3 close parentheses minus 5. So in this case we would work what is in the parentheses first, 4 + 3 and get an answer of 7....." That would be accessible as opposed to, "In this problem we work what is in the parentheses first and get a 7 there."

## Selecting Commercial Media

When you select media for the classroom look for media that already has high quality captions and descriptions. If more school demand accessible media it won’t be long before producers stop making inaccessible media. If the copy of a video your school has is not accessible don’t just assume that is the end. Contact the producer to see if they have an accessible version. Sometimes they do and will exchange your copy for an accessible one.

If you cannot find an accessible version choose media that will have a long shelf life, so that when you do add captions and descriptions they can be used for more than one class or one year.

Before you can make commercially produced media accessible you’ll need to contact the copyright holder and gain permission. Currently Copyright laws and Accessibility laws are in conflict. If you do not have permission to make a video accessible it is better to choose a different video.

## Creating Accessibility In-House or Outsourcing

Many institutions assume that it will be less expensive to create captions and descriptions in-house. However, this is not always the case and is not always desirable. Before making a decision you should do a cost analysis.

Look at the amount of media that needs to be made accessible. Probably the number are overwhelming. However, you don’t need to make everything accessible overnight. Prioritize. First be sure all media on your website which available to the public is accessible. This includes things like recruiting videos and publically available educational materials. Next focus on media in classes with a deaf or blind student enrolled. The final goal should be to use only accessible media in all classes but it can be done in stages.

When considering how to make the media accessible consider the number of personnel you have available to work on the projects. Usually full time staff is already working at capacity. Using student workers is one idea but maybe not the optimal solution, since they require more training and will only be with you a short time. Consider the time restraints on your personnel and how quickly you need the media to be accessible. Also consider the amount of technical expertise you’ll have access to. Can one of your staff edit video and work with captioning software? Will your campus IT help you? Would it be easier to work with a company that can give you a finished product?

The overall goal of adding captions and descriptions to video is to make it accessible. If the captions and descriptions are not high quality, then the media may still not be fully accessible. Getting a cost break up front won’t help if the media has to be recaptioned or redescribed. On the reverse side don’t assume because you are paying a premium price that the access is top quality. Ask questions and do your research before choosing a company. Make sure they follow the DCMP *Captioning Key* and *Description Key*. If you choose to outsource there are many reputable companies that will produce high quality captions and descriptions at a reasonable price.

## Keep Your Eye on the Prize

We often think the goal of captions and descriptions is to provide equal access for individuals with disabilities. However, accessible features benefit everyone and support the goal of Universal Design. Making media accessible increases the learning potential for all students. Poor quality captions and descriptions benefit no one.