

## Distance learning and accessibility



The corona virus impacts higher education. Educational activities will not continue on campus for an indefinite period of time. While the rapid transition to distance learning in general already requires a major adjustment, this poses challenges for making online teaching activities accessible to students with disabilities. In this contribution, SIHO provides some tips about distance learning and accessibility, with specific focus on lesson recordings and the importance and placement of subtitles.

### 1. General guidelines for digital accessibility

Be extra attentive to the different preferences and needs of the diversity of students within higher education and digital accessibility when designing online educational activities. Everyone benefits from making your (teaching) materials accessible. For example, think of students who surf mobile or have to study in a noisy environment.

SIHO developed the [guideline universal design from policy to practice](#) and fact sheets on (digital) accessibility of [study material](#), [PDF and Word files](#), [PowerPoint](#), [the use of multimedia](#), [weblectures and lesson recordings](#), [learning paths](#), [websites](#) and the [digital learning environment](#). Various electronic learning environments, but also tools such as Word for example, have an [accessibility control function](#) as well.

General information about accessibility legislation and guidelines can be found on the [Anysurfer website](#). Here you can read [20 tips to design accessible online lessons](#).

## 2. Recording online lessons

### 2.1 Screen casting and captures

During this period, teaching materials for contact education will be converted into digital teaching materials by, for example, adding oral explanations and / or video meetings, online assignments, etc. to the existing presentations.

There are several screencast programs available for this. Two commonly used programs are Camtasia Studio and Screencast-o-matic:

- **Camtasia Studio** | Camtasia Studio enables more advanced video editing and screen recording. Here you can view the [basic Camtasia Tutorial](#).
- **Screencast-o-matic** | [Screencast-o-matic](#) makes it possible as well to record your entire screen, edit videos and share them. It is used to record videos themselves or to have students record videos as part of assignments.

### 2.2 General accessibility tips for recording videos

When recording videos, it is important to consider some general guidelines to optimize the intelligibility and quality of the recording:

- **Talk** | Speak calmly and clearly when recording videos.
- **Equipment** | Use a working laptop / computer, webcam, microphone and appropriate software such as Camtasia studio (Microsoft), Screenflox (Mac), Adobe Captive (both) or Screencast-o-matic (app). Own recording software of the institution, such as Panopto, can also be used if available.
- **Sound recording** | Do not place the recording equipment too far or too close.
- **Environment** | Try to work as much as possible in a quiet environment without disturbing noises.
- **Planning** | Make a script on how you will record your video. This ensures that you will speak more clearly and confidently, which increases intelligibility.

- **Outline** | If possible, provide an outline of the contents that will be discussed, along with a list of technical terms and acronyms used. That way, students can follow better.
- **Subtitles and transcript** | Providing subtitles and a transcript ensure that hearing-impaired or deaf students can follow the content as well.
- **Visible face** | Take recordings in which your face is clearly visible while recording the accompanying text (in function of lip reading).
- **SIHO sheet** | Take a look at the [SIHO sheet on the universal design of web lectures and lesson recordings](#).

## 2.3 Purify sound recordings

In addition to the general video recording guidelines, there are several applications that can be supportive for the recording of high-quality video and sound files. These tools filter out ambient noise, reduce noise, allow to edit, speed up or slow down sound recordings, amplify or soften sound, add personal sound filters, etc. Some examples include [Audacity](#), [AudioFix](#), [WavePad](#), [EasyListening – Hearing Aid](#) and [uSound](#). Even with (video) calls, applications such as [Krisp](#) can provide support in filtering disturbing ambient noise.

## 2.4 Subtitle video recordings

By subtitling videos, it makes the content accessible to everyone. Subtitles are not only necessary for hearing impaired or deaf students, but are also beneficial for students who work in a noisy environment, foreign-language students, etc.

### 2.4.1 Different types of subtitles

There are several types of subtitles:

- **Real-time subtitles** | This form of subtitling occurs during a synchronous activity such as video streaming or online lessons. Usually there are costs associated with such a facility and must be arranged in advance.
- **Closed subtitles** | The availability of closed subtitles is indicated by the CC (Closed Captioning) icon. The display of closed subtitles is optional. Users can turn them on or off through the device on which the video is playing or in other ways.

- **Open subtitles** | Open subtitles are not optional but are always displayed. Compressed files can degrade quality and readability. It may also distract some users.
- **Audio description** | Audio description is especially important during movies and includes adding a written description of sound effects such as 'creaky floor' or 'breaking glass'.

In general, time-synchronized and fully descriptive subtitles provide good accessibility. Unfortunately, the current options for (live) subtitling are not completely fine-tuned. These are often paid software packages or professional services. Free subtitling tools are often time consuming and require a certain amount of effort to master the tool. The fast and (semi) automatic subtitling or transcribing of videos is still under development. Below we list some tools that enable captioning/subtitling of videos. It is important to take this critical note into account when using these tools.

#### **2.4.2 Use already subtitled media**

The easiest and fastest way to add subtitled content to your course is to find media that already contain subtitles. You can filter your search by having your search followed by a comma and "cc". For example, to search for subtitled videos about MOOCs, type "MOOC, cc" in the search box. Some platforms such as iTunes have filters that allow you to search for media with subtitles. This does not guarantee the quality of the subtitles.

#### **2.4.3 Have your media subtitled externally**

Although this is not the cheapest solution, when large amounts of media need to be subtitled quickly, it is often decided to have your media subtitled by an external company. An example of a company that provides this service is [Amberscript](#). Amberscript works with speech-to-text models that are specifically focused on the academic domain and the associated specific terminology. Amberscript combines automatic speech recognition with control by professional transcribers. You can use Amberscript per minute, per hour or per five hours of uploaded media.

#### 2.4.4 Subtitle media yourself or internally

When subtitles are provided internally, it is important to determine which colleagues will be responsible for this when and in which situations. Subtitling media yourself "from scratch" is quickly quite time-intensive.

##### Preconditions

Some important preconditions for subtitling media yourself:

- **Good internet connection** | Make sure you have a good internet connection
- **Equipment** | Provide good software and equipment, for example a good working computer, good headphones, etc.
- **Material** | Provide easy access to the media files that have to be subtitled.
- **Environment** | Provide a quiet workplace without disturbing ambient noise.
- **Preparation** | Know what you're getting yourself into. This blog provides a [tutorial for creating subtitles for online lessons](#).

##### Supporting tools

Several tools exist that support media subtitling. These tools are not completely fine-tuned, but can provide a first step / form of support for subtitling media:

- **Google speech-to-text** | Both Google Docs and the online version of Word have dictation and reading functions. After some practice, this feature offers many options to quickly process text and information. [Read more about how the speech-to-text function works within Google](#).
- **Earfy** | [Earfy](#) provides subtitles continuously, has a correction button and an indicator that alerts you to the voice quality.
- **AVA** | [AVA](#) is a speech-to-text app that functions as a last-minute interpreter. During every conversation, Ava gets to know the voice better and improves the intelligence of the system. The system improves with use.
- **Webcaptioner** | [Webcaptioner](#) is a free tool that provides real-time subtitles for events, lectures, etc. You just need a properly working microphone.
- **Google Live Transcribe** | [Google Live Transcribe App](#) is an Android app that converts speech into text via real-time speech recognition in near real time.

- **Google Cloud Speech to text** | [Google Cloud Speech to Text](#) converts audio to text using powerful neural network models.

In addition to these apps, subtitling media is also supported by various platforms and electronic learning environments. Below we discuss the possibilities in YouTube, PowerPoint, Canvas and Blackboard.

### Create subtitles in YouTube

YouTube **automatically** adds subtitles to videos shortly after they are uploaded. The automatically generated subtitles are often not 100% correct and require some adjustment, but they provide a good basis. Adjustments are easy to make within YouTube itself. [Read all instructions on using automatic subtitles in YouTube here.](#)

- **Automatic subtitles** | If automatic subtitles are available, it will be automatically added to your video. The automatic subtitles may not be ready when you upload a video. The processing time depends on the complexity of the audio, the automatic subtitles will appear later.
- **Check** | Always check automatic subtitles carefully and edit parts of which the transcript is incorrect.

To check and edit automatic subtitles:

- **Video management** | Go to [Video Manager](#) by clicking on your account at the top right> Creator Studio> Video Manager> Videos.
- **Edit** | Next to the video you want to add subtitles to, click the dropdown menu next to the 'Edit' button.
- **Subtitles** | Select 'Subtitles'.
- **Published** | If automatic subtitles are available, you will see 'Language (Automatic)' in the "Published" section to the right of the video.
- **Edit** | Check the automatic subtitles and review [instructions for editing or removing](#) parts that have not been properly transcribed.

In addition to automatic subtitles, YouTube also offers **other subtitle functions**:

- **Subtitle settings** | You can change the default subtitle settings on your computer or mobile device. [Read here how to do this for the computer, for Android and for iPhone or iPad.](#)
- **Add subtitles yourself** | It is possible to add subtitles to a video yourself. [This step-by-step plan explains how you can add subtitles yourself.](#)
- **Automatic subtitles live streams** | Live subtitles are currently under development and only available on English-language channels.

### Create subtitles in PowerPoint

- **Written notes** | Always add written notes in the note box of each slide in the presentation so that the information is available to each student.
- **Add speech** | Within PowerPoint you can also easily [record a slide show with spoken text and add time settings to it](#). You can then [save this presentation as a video](#), so students can follow the "lecture" at home online.
- **Add automatic subtitles** | The online version of PowerPoint makes it possible to add automatic subtitles to your presentation. Via the tab "slideshow", choose "always use subtitles". Automatically generated subtitles will now appear on your slides in presentation mode. These are not perfect, but they do provide initial impetus and / or support.
- **Add closed captions yourself** | It is possible to [add closed caption subtitles to media in PowerPoint, here you can see how to do this](#).

### Create subtitles in Canvas

- **Add subtitles** | Within Canvas it is possible to [create subtitles or upload existing subtitles and add them to a new or uploaded video](#).
- **Live subtitles** | It is also possible to use subtitles within BigBlueButton (live lessons within Canvas) by having one person type live subtitles.

## Create subtitles in Blackboard

It is also possible to provide live subtitles within **Blackboard** by assigning participants the role of attendee. Attendees type what is said during a session. Other participants can see what is being typed in real time.

- **Multiple attendees** | You can have attendees for multiple languages.
- **Save subtitles** | Subtitles entered during the live session are also added when the session is recorded. If multiple subtitle tracks have been used, only the first track is recorded.
- **Naming attendees** | [Read more about appointing a participant as an attendee.](#)