# Creating accessible educational recordings

This guidance provides tips for tutors on how to create accessible educational recordings, including recordings of live teaching sessions in a lecture room and pre-recorded content, also known as ‘content capture’. This page also provides more information about captions (for livestreaming, for other languages, and what can be done to optimise accuracy of the speech recognition) and audio description.

## Lecture recordings

Where live teaching is recorded in a lecture room with an established AV set-up, tutors can take the following steps to ensure the content is effectively captured and accessible to all:

1. **Familiarise yourself with the recording set-up and equipment.** Is there a video feed and what does it show? Where is the microphone? Are there speakers to amplify sound? Is there a sign notifying students that a recording is taking place? If you spot problems with the room set-up or have any questions about how to use equipment, talk with the AV technician.
2. **Wear a lapel microphone wherever available.** Lapel microphones are much better for capturing your voice clearly, especially during board work or when moving around. Clip the lapel microphone approximately 15-20cm below your chin and ensure it is not covered by clothing.

Alternatively, if a fixed microphone is being used, stay in range. If it is necessary to turn away (eg to write on the board) stop speaking and resume when facing the microphone again.

1. **Speak clearly at a normal, steady pace.** This is helpful for all students, whether listening in-person or to the recording. It also increases the accuracy of automatic captioning. Students have reported that they find automatic captioning helpful for searching for relevant sections and to reinforce comprehension.
2. Face towards the audience and the camera whenever possible and stay within the camera frame.
3. **If amplification is used, avoid standing close to speakers.** This reduces any echo on the recording. If the amplified sound through speakers is too distracting, you may be able to arrange with a technician for this to be turned off as long as you can still be heard well in the room.
4. **Describe visual information containing core learning material.** This is especially important for audio-only recordings but will also be vital for people with visual impairments. Mention slide numbers or slide titles during the lecture (ie ‘Here on slide 6...’), especially if the recording is audio only.
5. Using electronic whiteboards or pre-prepared slides is preferable to drawing on a physical whiteboard, as these can be more clearly seen in a recording. If using a whiteboard or equivalent try to **ensure** **visibility and readability of notes and drawings**, for example,use fully inked markers in high contrast colours such as black or dark blue. On a blackboard press firmly so chalk leaves a solid white image.

**For PowerPoint slides**: use large font sizes, minimise the amount of text per slide, keep slide templates simple, and use the layout options in PowerPoint rather than editing blank slides. For full details, see these [accessibility tips for PowerPoint](https://www.ctl.ox.ac.uk/creating-accessible-powerpoint-presentations).

1. **Repeat questions from the audience** before answering as the original questions may not be audible.
2. **Make PowerPoint slides and other learning materials available as separate electronic files in Canvas.** This is helpful for note-taking and for students who need to use accessibility tools. See also the Centre for Teaching and Learning’s [advice for creating accessible PowerPoint presentations](https://www.ctl.ox.ac.uk/creating-accessible-powerpoint-presentations).
3. **Review one of the recordings and ask your students for feedback** so that you can check on issues such as audibility and visibility oflearning materials. If there are problems, an AV technician can help to adjust the technical set-up.

## Pre-recorded videos and content capture

Pre-recorded content or ‘content capture’ allows for a different approach to teaching with the ability to present, segment and pace content in different ways, such as for review in advance of a teaching session or to revisit complex topics later.

There is no need to aim for perfectly produced videos, but establishing a recording set-up that you are comfortable with and makes best use of the space and equipment available will lead to a more accessible resource for students. Consider the following:

1. **Use a** **good quality microphone and stay at a consistence distance from it**. The Replay team has produced the following advice on [recording equipment for home or office use](https://help.it.ox.ac.uk/replay/equipment/home-office). Using a headset or a standalone microphone rather than the built-in microphone in a laptop is likely to provide better sound quality. If using a headset, position the microphone stem to the side of your face rather than close to your lips, as this avoids sound distortions. Do not place your microphone close to your computer if there is significant fan noise.
2. **Check microphone sound levels and recording quality** settings in your Operating System and within Panopto. In Panopto, ensure that the audio recording setting in ‘primary sources’ is set to ‘ultra’. You can check that the volume levels are appropriate in Panopto in the ‘create new recording’ tab, in the ‘primary sources’ area. If the sound level bar goes into the red zone while you are speaking, the microphone volume is too high. **Carry out** **test recordings** and check the sound quality by listening back with headphones. In-built cameras in laptops (especially on old machines) can provide poor quality images.
3. **Think about the recording location and minimising disturbances**. Use an enclosed space with plenty of furnishings to avoid sound reverberation. Close windows and doors to minimize external noise, set phones and notifications to silent and close down unnecessary applications.
4. **Include a video feed of the presenter**, in addition to the PowerPoint presentation or other screen-sharing. This builds a personal connection, and is crucial for students who lip-read.
5. **Check that your room is well lit** so that your face and other learning materials can be seen clearly.Avoid having a window directly behind or beside you as your face will be silhouetted. Closing curtains and switching on overhead lights or lamps can be helpful for diffusing light. Experiment with different lighting until you find the set-up that works for you.
6. **Face the camera, positioned at or slightly above eye level.** This enables students to see facial expressions more clearly. If a built-in webcam on a laptop is used, place it on a stand to achieve the correct height. Any laptop support should be sturdy to avoid the camera shaking.
7. **Avoid visual distractions** by choosing a neutral background for your recording (eg a relatively blank wall) and by avoiding highly patterned backdrops and clothing (these can seem to ‘dance’).
8. **PowerPoint slides**: use large font sizes, minimise the amount of text per slide, keep slide templates simple, and use the layout options in PowerPoint rather than editing blank slides. For full details, see these [accessibility tips for PowerPoint](https://www.ctl.ox.ac.uk/creating-accessible-powerpoint-presentations).
9. If screen-sharing, close down all unnecessary windows and [increase the size of your mouse pointer](https://mcmw.abilitynet.org.uk/making-mouse-pointer-larger-windows-10?utm_source=google&utm_medium=cpc&utm_campaign=Dynamic-Search-MCMW&gclid=CjwKCAjwiOv7BRBREiwAXHbv3Kax14YbtZIvznRdg3KIbkFiZkLJprWTz32GfOJFdkIvPaKg3dhdvRoCWZcQAvD_BwE). You may also need to apply magnification to the screen so that students can see what’s displayed more clearly (Cntrl+).
10. If you need to write out equations or draw diagrams, using [electronic whiteboards](https://www.ctl.ox.ac.uk/electronic-whiteboards) or pre-prepared slides is preferable to recording a physical whiteboard or flipchart, as these can be more clearly seen by students.
11. Videos should be short and targeted with a clearly defined theme or purpose. If you are creating a large amount of related content, segment this into short recordings of no more than 5-10 minutes.

## Improving automated captions

Captions provide a way for people who are hearing impaired, or have difficulty processing dialogue, to access to audio-visual material. They benefit students with a variety of needs, such as those with hearing impairments and neurodivergent students (including those with specific learning difficulties or autism), who cannot follow audio content easily. Captions are useful for all students in giving flexibility to turn off the sound, to access a video in noisy environments, and as an aid to notetaking and clarifying terminology.

Panopto automatically captions recordings, and students have the option of viewing these by clicking the ‘cc’ button in the media player. Good quality audio is the single most important factor in the accuracy of captions. To optimise the accuracy of captions, tutors can:

* Ensure good sound quality: use a good microphone and speak at a consistent distance from it (for more detailed advice on sound quality in lecture room contents or for pre-recorded content, see the sections above).
* Speak clearly at a normal, steady pace.

Automatic Speech Recognition has improved in recent years, but some inaccuracies will remain. Staff are not expected to manually edit captions or transcripts that are automatically created, and access to video content should not be restricted where it has not been possible to eliminate errors. There is a [quick guide to editing captions](https://help.it.ox.ac.uk/replay/captions) including how to [export captions](https://help.it.ox.ac.uk/replay/captions#Exporting%20captions) for staff who wish to do this. Adding detailed lecture notes or scripts, and using PowerPoint slides to summarise key points and explain new terminology can mitigate for captions that are not fully accurate.

Automated captions are currently deemed sufficient to meet legal accessibility obligations, unless there are widespread caption errors which have a disproportionate impact on meaning and intelligibility. If this is the case, then manual captioning or transcription may be a reasonable adjustment for individual disabled students. Departments are encouraged to contact the Disability Advisory Service for advice and support. The Replay team can also advise on third-party captioning services. Students who require manually edited captions for increased accuracy, or text description of visual content as a reasonable adjustment, should contact the University Disability Advisory Service at disability@ox.ac.uk.

## Describing visual content

Audio description provides an alternative to visual content for people who are visually impaired. It is only necessary to provide descriptions for visual material that is necessary for understanding the content.

If any significant meaning in your video is presented purely visually, for example a visual demonstration of how a piece of equipment operates, then an audio description is needed. For much visual content, the best way to handle audio description is to provide a full and explicit description within what you say in the main audio.

For example, ‘this chart shows that sales increased significantly, from 1 million in the first quarter of 2019 to 1.3 million in the second quarter’, is a full description of the visual information, but saying ‘you can see how sales were affected on this chart’ relies on the user being able to see. A key part of providing good audio description is to refer to objects explicitly, rather than using pronouns that refer to the visual content. For example, ‘attach the small ring to the green end, which is the larger end’ rather than ‘attach this to the green end’. This not only improves access for visually impaired students, but is also helpful for all students to reinforce comprehension of the visual information.

## Captions for livestreamed events and other languages

### Captions for livestreamed events

Automated captions are available to all during live Teams sessions by clicking on three dots icon and then ‘turn on closed captions’ as well as with Panopto’s webcasting service.

Recordings of Teams meetings will not include the automated captions which appeared during the meeting. However, transcripts are available and [recordings uploaded to Panopto](https://www.ctl.ox.ac.uk/recording-teams-meetings) will be re-captioned automatically.

Zoom also has an [automatic captioning feature as well as a facility for live manual captioning](https://support.zoom.us/hc/en-us/articles/207279736-Closed-captioning-and-live-transcription) by third parties or participants. It is a good idea to tell students about the captions functionality in the platform you are using and encourage them to try it.

If users come across uncaptioned content or inaccurate captions, Google Chrome provides a captioning tool, which appears whenever spoken audio is identified in the browser. To turn on captions in Chrome, go to Settings>Advanced>Accessibility, and there is a toggle at the top of the screen to turn live captions on or off.

Live human captioning may be required as a reasonable adjustment for some students and the Disability Advisory Service can help facilitate this, or agree alternative reasonable adjustments (disability@admin.ox.ac.uk).

### Captions in languages other than English

Panopto's default language is English. However, [the language setting can now be changed](https://support.panopto.com/s/article/How-to-Use-Multiple-Language-ASR-Captioning) for individual folders. The following languages are supported: Spanish (Mexico or Spain), German, French, Dutch, Thai, Chinese (Simplified or Traditional), Korean, Japanese, Russian, Portuguese, Polish, Danish, Finnish, Hungarian, Norwegian, Swedish, Italian.

There is currently no comprehensive solution for content that features more than one language.

## Further information

* Guidance on [Evaluating the accessibility of recordings for re-use in teaching and learning](https://www.ctl.ox.ac.uk/files/evaluatingtheaccessibilityofrecordingsforre-usedocx)
* The University of Oxford [Educational Recordings Policy](https://academic.admin.ox.ac.uk/a-z-policies-guidance#widget-id-1310616) and the related [Frequently Asked Questions](https://help.it.ox.ac.uk/replay/faq)
* Introductory guides to recording videos using the [Panopto manual recorder](https://help.it.ox.ac.uk/replay/manualrecording)
* [Oxford University Panopto Accessibility Statement](https://help.it.ox.ac.uk/replay/accessibility/statement)
* Information on [making audio and video content accessible](https://www.w3.org/WAI/media/av/av-content/) from the Web Accessibility Initiative