

Training Hub Video Training Production Guide

There are many workflows, programs, and standards in creating video training – from filming a short demonstration on a smartphone to procuring professional film studio staff to capture a course. These guidelines have been developed by the SciLifeLab Training Hub to support creation of quality training with a video component using easily accessible equipment and in formats that are applicable to the research environment. It builds on the [Creation Guide for Webinars and Recorded Lectures](#) by providing an expanded guide that is inclusive of practical training and digitalization.

This guide is applicable to video training components that consist of screen recordings, live video, or voiceovers – you don't have to be in front of a camera to share your knowledge!

This guide provides instruction on the following:

1. **Preparing for filming**
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1. Preparing for filming

What do you want your video to accomplish? Preparation for this end goal makes for efficient, easy capture of your knowledge. The first step when planning to incorporate video in training materials is to define your **learning outcomes** and **target audience**. A guide for developing these is available in the [Creation Guide for Recording Lectures and Webinars](#), which covers training creation from developing learning outcomes to

assessment. If your video is directed at training bioinformaticians across Sweden in a pipeline developed at SciLifeLab Uppsala it will look different than training Master's students on how to use a specialized microscope in Umeå, or creating a team science theory module in an online course for SciLifeLab fellows and management. Once you know who and what your training is for, it becomes easier to shape the format of your training.

Explore your format

Video training benefits from the audiovisual component, which can enhance retention if used strategically. If your aim is to digitalize a short course offering it is possible to simply record and upload an in-person course instance, however we challenge instructors to consider the digital learning experience and plan to create engaging training that is effective in sharing their knowledge in video format.

It is helpful for your learners to integrate other digital materials into your video – for example by showing a screen capture of using a web tool, referring to sections from accompanying material, or requesting your learners perform an exercise. Some questions to consider about your training format:

- Are there other components that can or will be used in the training like exercises, assignments, protocols, mentoring/coaching, or quizzes?
- Is there the possibility to prompt learners to comment or engage either with the instructor or peer community through associated forums, comment sections, or chats?
- How can you add structure to your training to avoid cognitive overload, for example by adding a video table of contents or regular section titles that provide a sense of progression and a place to pause?
- How can you incorporate feedback or assessment to determine if your training has been successful?

Things like highlighting, subscribing, commenting, or creating a vlog integrate learner input in the digital space. For inspiration, suggestions for learning activities that can be associated with video media can be found in the accompanying leaflet [Using digital technology to enhance learning](#).

Planning your filming setup

Once you have defined the purpose, the next step is to detail what exactly you will need to produce in order to achieve that. Below are some basic considerations for filming that can be helpful to answer when planning. They can be divided into themes of time, location, and people.

Time

- How much material do you need to film?
- Where can you use cuts or break points in filming?
- Will you deliver your entire training component in one take?
- Can you repeat elements of your training to have a variety of takes to choose from?

- How much time will you have to test your setup?

Location

- Do you need to book a facility to produce recorded material (eg. specialized research equipment or a conference room)?
- Are there other locations, shots, or information you need to capture to complete the video?
- Are there voiceovers/screen captures you need to prepare before or after?
- Will you need to feature any of your training materials in the video?

People

- Is your audience present with you during recording?
- Will your audience have access to other training material along with your video?
- Do you need to coordinate several presenters?
- Do you need to advise anyone or obtain permission to film?

Shot lists and scripts

Once you have decided the form and purpose of your training, it is helpful to create a shot list – a storyboard of how you want your training to unfold that you can use as a guide to gather all the recorded material you need. Depending on the complexity and length of your video component and your presentation style, it may also be helpful to prepare a script, either as a full sentence by sentence plan of what you will say, or as bullet points of what you want to cover.

Tips:

- The shorter your video is, the more precise what you say needs to be.
- Using a bullet point guide to map out your presentation can create a more natural delivery than a full script.
- To maximize completion rate and audience engagement, try to structure your training in blocks of <15 minutes.
- If you are digitalizing a course instance, creating a checklist for each module to ensure that it is captured can be useful.

Equipment List

To create video training you will require one or more of the following:

1. A device capable of creating a recording – a computer, phone, webcam, camera, GoPro, etc.
2. Software for capturing a recording – Zoom and Quicktime are simple built-in options if using a computer to record
3. A device capable of recording audio that can be worn on your person – earbuds, a headset, or clip-on microphone
4. A method of stabilizing your recording device – a tripod, selfie stick, boxes to elevate your laptop, etc.
5. If your training is longer than an hour, a data storage device.

Preparation Example – Training Hub video editing tutorial

Format: This video demonstrates the process of editing a video on MacOS, broken into segments focused on the process of interacting with the software. The delivery is asynchronous (no learners present), with a single presenter, and it can be filmed in a conference room at Campus Solna. The target audience is anyone across SciLifeLab who uses this operating system and is interested in learning introductory-level video editing skills. The learning outcome is that by the end of the tutorial, learners can apply this editing workflow to their own material.

Setup: Film a maximum 25-minute video.

- Setting: Screen capture with voiceover
- Format: Capture short segments of each process, then record voiceover afterwards while watching the segments
- Script: None.
- Extra materials: some source material captured in SciLifeLab Campus Solna

Equipment: computer, webcam, headset, monitor for capturing an uncluttered screen recording

Shot lists:

Live video:

- A. Two short videos of the Campus Solna environment

Screen capture:

- B. Introduction
- C. Clip Assembly & Trimming
- D. Titles & Transitions
- E. Audio & Voiceovers
- F. Custom Titles
- G. Exporting
- H. Generating Captions

2. Capturing training videos

Now that you have prepared the plan for creating your video training component, it's time to set things up and capture the material. While there are almost unlimited resources one can find on creating videos, there are a few simple considerations that can make a big impact on the quality of your training.

Lighting and sound

If you are capturing a person or process in the real world, adjusting the lighting and sound quality of your recording are two of the biggest factors in achieving good quality video. For example, capturing a live video recording of a person facing a window results in better lighting than if the window is behind them. Since classrooms or offices are not set up with film lighting in mind, and since natural light quality and duration in Sweden is weaker during the winter, using a well-lit room with an additional light source is a good strategy.

Tips:

- Direct your additional light source towards the person being recorded.

- If you are using a webcam or have the possibility to change video recording settings, switch to manual focus, exposure, and white balance. Even if you don't change the settings, this will result in more stable video lighting and focus than automatic mode.
- Having something in the background – a plant, coloured wall, or shelves of lab consumables – can provide visual interest, but ensure it is not so cluttered it becomes distracting.

For sound, a recording device attached to the person being filmed or a microphone is a much better option than using the integrated microphone on a laptop, webcam, phone, or camera. This is also true when recording voiceovers.

Tips:

- Adjust the microphone sensitivity to ensure that background noise is kept to a minimum.
- When recording directly into a microphone for voiceovers, fix the microphone 2.5-10cm away from the speaker's mouth. Using some type of windscreen (like a pop filter) or holding your index finger at the end of your nose, between your mouth and the microphone (in a 'shhh' motion) will break the wave of air and help prevent puffs of air from being recorded.
- It's better to increase the sensitivity of the microphone than to try and speak more loudly.

Setting up and capturing

There are many programs that have been developed for the purposes of capturing video, but if capturing recording on a computer, a simple and widespread option is to use QuickTime Player (MacOS native software), or Zoom (OS agnostic). To begin recording, select New Movie or New Screen Recording from the file menu in QuickTime Player (MacOS), or start your personal Zoom room and press record (OS agnostic).

Tip:

- Ensure that quality settings are set to high if using QuickTime
- For better quality Zoom recordings, ensure your recording is saved locally

Testing

Like pancakes, the first attempt at filming is usually not as good as subsequent ones. Before you begin your training capture, start with a few short tests of your setup. This gives you the chance to adjust anything like sound or lighting that is simpler to fix before than after. Record a few moments of your training and play it back to see if anything needs to be adjusted. A quick checklist of critique questions for your test video is below:

- Is the person or equipment in focus?
- Do horizontal and vertical lines appear straight and is the person or technique at the right distance?
- Does anything inside the frame need to be removed/adjusted/centred?

- Are the lighting and exposure adequate to see what is happening?
- Is the audio loud enough to be clearly heard?
- Is there any interfering background noise that can be removed?
- Is the instructor clear, slow, and engaging enough to be understood?
- Does the instructor need any coaching, for example, to look into the camera more?
- Are there any people, data, or items present that should not be recorded?

Seeming natural while being recorded is a performance skill, and it's common that people feel nervous or even uncomfortable watching themselves in a recording. While it is possible to overcome this and develop your skills, there should never be pressure to participate in recorded training material. Along these lines, instructors should always clearly communicate the option for learners in recorded Zoom-based video training components to participate anonymously, without video turned on and/or communicating via the chat.

Tips:

- To improve the quality of your recorded voice, practice speaking while breathing from your diaphragm.
- If you feel nervous, make a test recording of several presentation styles, ranging from high energy YouTube influencer to as monotone and flat as possible. Which do you feel most engaged with? Which is most comfortable for you to deliver?

The Shoot

It is good practice to have more than one camera rolling if you only have one attempt at capturing the training – for example if you are demonstrating a technique with expensive components or if you require both close-up and distance shots. If your training is short or depends on a particular piece of equipment or a specific location, recording a few takes can be a good idea.

Tips:

- Always save your video training to a data storage device as soon as you are finished!

Capture Example – Training Hub video editing tutorial

Before recording any material for the tutorial, I tested the webcam capture, voiceover recording, as well as screen captures to familiarize myself with the processes.

I spent 10-15 minutes setting up, which included:

- Setting computer, webcam, and headset up, connecting and testing them
 - o I needed to increase the webcam exposure for the overcast day (my webcam is LogiTech, which has a software called LogiTune for this)
 - o The room I recorded the live video in at had a strong echo, so I changed to a location with more sound absorption (thick curtains) to record the voiceover.
- Performing a trial run of the microscopy screen capture.

The shoot:

- I took a few takes of each live and screen capture, and recorded several takes of each voiceover

- It took a few tries to get recordings I was happy with!

3. Editing and post-production

Similar to video capture, there are many programs that have been developed to support video editing and production, ranging from Adobe Lightroom to smartphone apps. A full step by step tutorial on simple video editing using the native MacOS software iMovie (MacOS) and Microsoft Powerpoint can be found in the accompanying [Tutorial: Assembling a training video using MacOS](#).

The workflow covered in this tutorial is:

- Choose videoclips and put them together in sequence
- Trim your clips to condense information
- Add titles and animations to direct your learners
 - o This tutorial uses PowerPoint as a flexible method of adding direction throughout your training
- Add music and voiceovers
- Generating editable audio transcripts

4. Delivering your video training

Once you have created your video training component, it is time to deliver it to your learners or target audience! Don't forget to add your training to the [SciLifeLab Training Portal](#)!

Exporting formats

When you finish editing your video training component, ensure that you export or save it as a high-quality video file. MP4 files are the most common file format, though QuickTime will export as .mov files which are high quality, though large files.

Video hosting

There are several solutions for delivering your video training, ranging from hosting on SciLifeLab Training Hub channels to integration in eLearning platforms. Connect with the Training Hub to discuss the best option for your training.

Obtaining a DOI

Regardless of where your video is hosted, it is important that it has metadata coupled to a persistent identifier that can be used to collect additional material together as well as point people or granting agencies to your training efforts. The Data Centre repository is set up to collect authors, funding, training materials, other information and associate these under one DOI.

The [procedure for acquiring a DOI from Figshare](#) is available from the SciLifeLab Data Centre.

Creating FAIR and Open video training

Good training should not only bring learners to a higher level of understanding on a topic, but also try to lay the foundations for better future training wherever possible. For example, you can make a voluntary effort to address the reproducibility crisis in research through adhering to FAIR and Open Science standards wherever possible¹. Some considerations for creating Open training are as follows:

- Where can you increase the Findability of your training materials, for example by using Bioschemas to label your training material for the web?
- Are your course materials openly available? We strongly encourage all instructors to publish training and training materials with open access.
- Where can your training connect with other nodes of the research ecosystem? Are there further training events, opportunities, or communities that can be linked to your training?

As a final note, it can be more labour-intensive to update a video than written materials or PowerPoint slides, so much like peer reviewed journal articles, incorporating context on the year, location, standards, and forum can help potential learners evaluate the relevance of the information. For example, including in the description that your DNA sequencing training video was captured at a summer school in Gothenburg in 2010 is particularly valuable in a field that has seen rapid technological advances in the past decade.

Sources

1. Garcia, L., Batut, B., Burke, M.L., Kuzak, M., Psomopoulos, F., Arcila, R., Attwood, T.K., Beard, N., Carvalho-Silva, D., Dimopoulos, A.C., et al. (2020). Ten simple rules for making training materials FAIR. PLoS Comput Biol 16, e1007854. [10.1371/journal.pcbi.1007854](https://doi.org/10.1371/journal.pcbi.1007854).

Have questions? Connect with us at traininghub@scilifelab.se

Visit the [SciLifeLab Training Portal](#) for more courses and training!