



cessda

Lights! Camera! Action! Teach!

*A Handbook for Making
Educational Videos*

Edited by Kristi Winters



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About this document

This handbook is a modular resource that supports first-time educational video or podcast content creation. It reviews the practical considerations and resources required to develop, create and publish videos, from start to finish, using a variety of formats. To make specific content easy to find, each chapter deals with one part of the educational video creation process.

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Executive Summary

This handbook is a modular resource that supports first-time educational video or podcast content creation. It reviews the practical considerations and resources required to develop, create and publish videos, from start to finish, using a variety of formats. To make specific content easy to find, each chapter deals with one part of the educational video creation process. Chapter one explains why YouTube is an effective platform for content, raises practical questions to answer before you start a project, and reviews project management and time management skills. Chapter two provides guidance on organizing educational content by using storyboards and a script.

Chapter three explains the importance of planning in the pre-production phase of the work. Creating a high-quality audio recording is the focus of chapter four. In chapter five, video recording advice and tips are provided. Editing audio and video together, as well as producing and uploading a video to YouTube, are covered in chapter six of this Handbook.

Webinars are the focus of chapter seven. The last two chapters review the technical requirements for various social media platforms and who uses them, and the two copyright licensing options offered by YouTube. The footnotes include links to online resources and training materials, and the appendices include examples and sample documents for readers to consult and use.

Abbreviations and Acronyms

CESSDA	Consortium of European Social Science Data Archives
OBS	Open Broadcast Software
CC	Creative Commons
Q&A	Question and answer

Introduction

By Kristi Winters

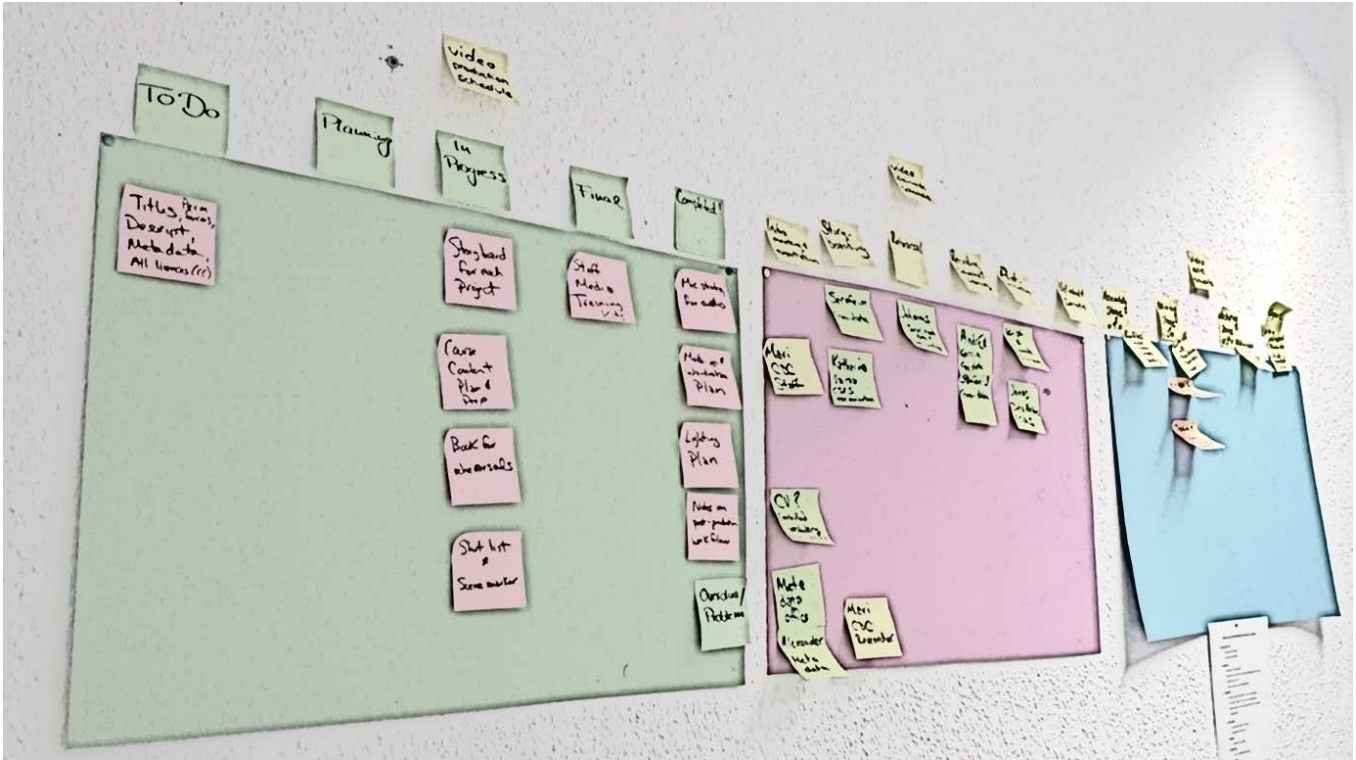


Image: "Kanban Like A Boss"¹

How to Use This Book

If you are looking for resource with advice, tips and real world examples to get you started creating educational videos or podcasts, this book will help you achieve your goals. It provides an overview of the considerations and resources your projects will need, as well as organizational tips to help you succeed. Chapters will guide you with step-by-step workflows, from designing your content to publishing it on YouTube. For those with video experience, just not in educational or tutorial videos, there's advice on structuring educational content optimally for videos and podcasts.

I used the video creation workflow itself as my basis for ordering the chapters. That means you, as the reader, should be able to use this Handbook in multiple ways to achieve your goals. You can:

- ➔ Read it from start to finish. This book takes you through issues you will confront while making an educational video.
- ➔ Read specific chapters. For those who have experience with video creation but want to learn more about social media promotion or about YouTube's copyright options, read those specific chapters.
- ➔ Read specific sections. Dip into only those sections relevant to your preferred mode of educational output.
- ➔ Consult relevant sections during the content creation process. Not only do the chapters have tips and suggestions, but the appendices are filled with supporting documents.

Each chapter provides an overview into one part of the educational video creation process. This modular structure lets you quickly get to the information you need. For instance, if you are recording a public talk for

¹ By Kristi Winters <https://twitter.com/KWintie/status/1187031452963278850?s=20>

the first time, dip into the storyboarding, video, and audio chapters for advice and information relevant to your needs. Check the footnotes of each section for hyperlinks to additional training or information resources. Here is a quick overview of what each chapter covers:

In **chapter one** I review the benefits of making educational videos, why YouTube is an effective platform for your content, pose practical questions you should be able to answer before you start your project, and give advice on both project management and time management skills, two skills absolutely necessary for your success. **Chapter two** provides an educational video structure to make sure your target audience absorbs the intended learning outcomes. We introduce storyboards as a way to visualize your final video, advise when you do and don't need to write a script, and provide an example script.

The next chapters focus on the pre-production, production, and post-production phases of work. **Chapter three** explains the importance of planning and preparation before you start filming or recording. We review pre-production strategies to help you create effective educational videos. Audio is the most important part of every recording, therefore creating a high-quality audio recording is the focus of **chapter four**. In **chapter five**, we turn our attention to filming and how to turn your storyboard drawings into a video.

Bringing audio and video together in the editing process, adding special effects such as a lower-third bar, producing and uploading your video to YouTube are covered in **chapter six**. Webinars are the focus of **chapter seven**. **Chapter eight** provides information and tips on how to promote your content on social media promotion. Finally, **chapter nine** explains the YouTube copyright options you'll have when uploading content to YouTube.

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In addition, several individuals kindly gave their time and expertise reviewing, editing and typesetting this book. My thanks to Layth AL Najjar, Ben McClean, Ann-Katrin Reinl, Steve Shives, Eleanor Smith, Irena Vipavc Brvar for their reviews and comments. Thanks go to Yevhen Voronin for his editing and typesetting work. Finally, thanks to my GESIS colleagues Libby Bishop and Vera Lomazzi for being a great team to work with.

I hope that in providing our experience, we inspire you to take your content to the next level.

'Break a leg'!

Kristi Winters, Editor

September 2020, Cologne, Germany

1. Creating Educational Videos and Podcasts: Getting Started

By Kristi Winters

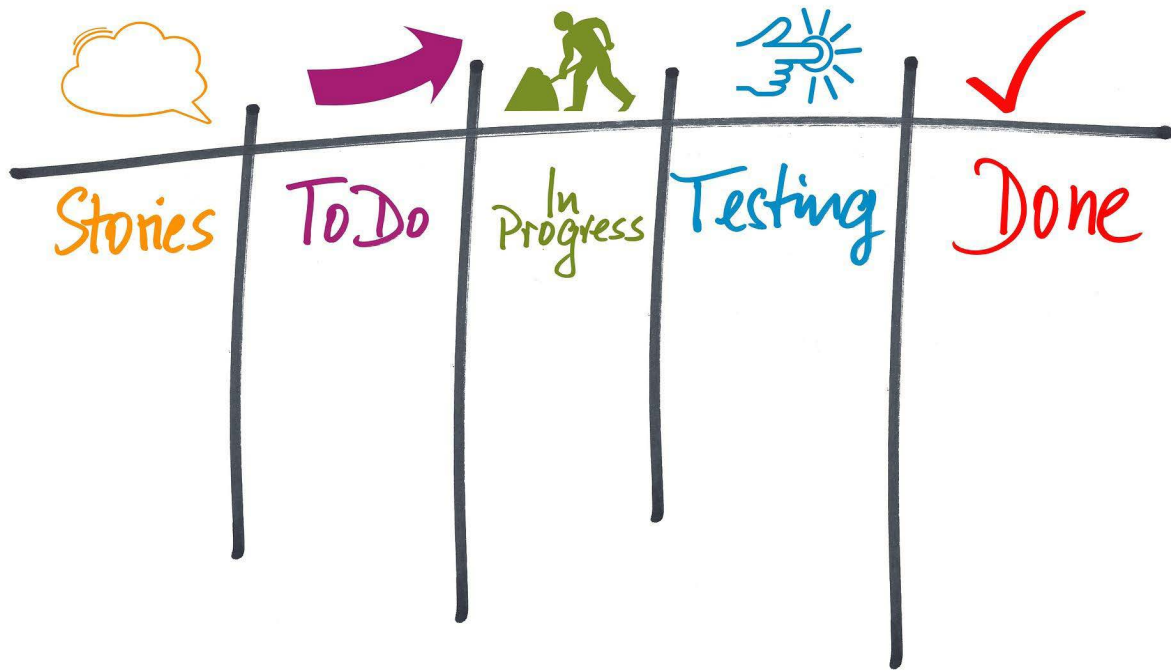


Image: "Work"²

Welcome! If you are new to educational video creation, or if you make videos (or podcasts) but want tips on how to structure educational content, this is the book for you. In this chapter, I review things that are important for first-time video directors. Yep, I called you the director. After all, if you're making educational videos, you're now the video's director. Congratulations! As the director, you're responsible for everything in the video and this book will help you produce the video that matches your vision. We worked hard to provide useful and practical information to help you succeed.

Before jumping into the practical and technical aspects of video creation, I start by reviewing advantages of educational videos (and podcasts) and benefits of YouTube publishing. After that, I pose a series of questions to get you thinking strategically about your project goals, and for that section I recommend you make notes on your project. I end this chapter with a section on project and time management advice.

To make this book useful for those who podcast, throughout this book we sometimes use the term 'educational content' or 'educational content creation' to be inclusive of podcasters as well as video directors. A specific note here for those interested in podcasts: this handbook is primarily aimed at educational videos directors; however, most video creation advice applies to educational podcasts as well. The difference is the audio-only nature of podcasts requires podcast directors to think creatively as to how to convey educational content in an audio-only form.

By the end of this chapter, you should understand:

- the benefits of communicating educational information through videos

² By Gerd Altmann <https://pixabay.com/illustrations/work-work>

- advantages of posting your content to YouTube
- practical questions you should be able to answer before you start your project
- which assets you already have and which you will need
- why project management and time management skills are necessary for your success.

1.1 Why create educational videos and the benefits of YouTube publishing

You have many options for publishing educational materials online: websites, downloadable documents and PowerPoints, webinars, or educational videos. Why should you invest time and effort making educational videos suitable for YouTube? In my view, the payoffs for well-designed, well-produced educational content are multi-faceted:

- Videos and podcasts are a cost-effective way to reach an international audience. A video (or podcast) series can reach those who couldn't afford to travel to an equivalent in-person event.
- Whereas an in-person training takes place on specific days, a well-designed training video series can be (re-)watched at the learner's convenience.
- Your content can remain online for decades, educating learners far into the future. That makes it an incredibly cost-effective way to educate your target audience.

Educational content can be so much more than a 90-minute webinar, or a keynote speech at your conference. Designing an educational video series for long-term relevance and repeated viewing is more time- and resource-intensive than a webinar or recording a live talk, but there are tangible benefits to a planned series. Here are a few reasons why videos are advantageous modes of delivering educational content.

Flexibility and modularization. Videos allow you flexibility in organizing your content for multiple audiences and in a modular structure. A short, teaser video published to your social media accounts promoting an introductory talk can attract new interest. Maybe your busy professionals don't have time to sit through three 20-minute webinars for the one 10-minute section they care about. Instead, you can create a video series, with a modular design, so they can focus on the content most relevant to their needs.

Control what your learner sees. As the video director, you control what is on screen. The director decides what the viewer will see and can use tricks to focus people's eyes on what you want them to notice, optimizing the visuals to reinforce your point. In a training video you can zoom in on the software interface to focus the viewers' attention.

Viewers learn at their own pace. Classrooms and live webinars are a 'one pace fits all' format. Educators, trainers, or experts have a pre-determined amount of content they want to cover in a set amount of time. Faster learners may get bored and lose concentration, while slower learners feel pressure to keep up. Educational videos can be paused, rewind and repeated, or replayed. Videos are useful for non-native speakers, especially when closed captioning text is added, if they missed a word or two. These are just three advantages of creating educational videos, and you can probably think of more. However, if you're reading this, you're already open to the idea of creating educational videos, so let's move on.

I encourage you to think creatively about your educational content, far beyond pointing a camera at your face and talking to it. I found that academics' default mode for delivering information online is webinars. To quote a phrase, 'when you're a hammer, every problem looks like a nail.'. Webinars have their place, absolutely, and they are a great way to deliver certain types of information. However, not only do academics default to webinars, they often reuse their text-filled conference slides. These are not optimal for keeping people's attention on a screen. By the end of this chapter I hope to convince you to let your content drive its delivery mode instead of trying to fit all your online learning into webinar formats. Next, let's talk about publishing your videos (or podcasts) to YouTube.

This handbook is written with the assumption your educational content will be uploaded to YouTube. In this book I've assembled technical support and start-to-finish advice on publishing to YouTube. However, if you're

still not convinced, here are a few advantages of YouTube you may not have known:

- YouTube has 2 billion users worldwide.³
- It is free, regardless of the number or size of your videos.
- It is easy to embed your YouTube videos in other websites.
- YouTube provides auto-generated closed captions that double as a free transcript service. You can upload corrected transcripts and foreign-language closed captioning for non-English speakers.

Despite the rise of other social media platforms such as Twitch or TikTok, YouTube is still the most logical platform to host long-term, long-form educational content.

1.2 Getting started

Time to get down to the practicalities. I'll list a series of questions to which you should have clear answers before you move to the storyboarding and script writing phase. This is where you should start to take notes. If you've been tasked with creating educational content, go through these questions with your supervisor or client and work with them until these expectations are agreed by everyone.

1.2.1 Know your audience

Who is your intended audience? Is it the general public, a subset of the general public, or academics and experts? When you know your intended audience, you also know the depth of knowledge you can assume viewers will have. The lower the level of assumed knowledge, the wider your potential audience, but you need more time to explain key concepts. The more assumed knowledge the viewers are expected to have, the faster you can get to the core content, but fewer people will watch your video and accurately understand its contents.

What do they know? List what viewers should already know before watching your video. Will you need to define basic terms, or explain acronyms, to ensure their understanding? If you anticipate a bifurcated audience of the general public and discipline experts will you try to address both at once? If so, do you need to write into your script a section informing experts they can skip to the next section (for instance, a specified time stamp in the video)? Should you create an introductory video and an advanced one instead of single video? People are busy, make it easy for them to get the information they want at the level they need.

What should they know at the end? Identify clear learning outcomes. Bullet point the most important things you want people to remember. If everything in your video is there to support and reinforce your learning outcome bullet points, it will keep your video focused and effective.

How much time do they have? A how-to tutorial on your website's search function shouldn't last 45 minutes. According to Quora, the average YouTube video length is 4 minutes and 20 seconds. This doesn't mean all your videos must be under five minutes. There is no magic number for how long a video should be, but they should be parsimonious. My advice is that your video should last as long as it must to convey the information accurately, but not longer than needs be to accomplish that goal. Edit your script and remove unnecessary repetition or tangents, and check that everything in the video (or podcast) directly contributes to your learning outcomes.

Languages. What will the video's spoken language be, and will some important people be excluded because of it? YouTube provides a free speech-to-text closed captioning service with every video upload – provided the audio is of high enough quality to be understood by the program. This free service makes it easy to translate the transcript and add translated time-stamped foreign language closed captioning into your video. If you intend to provide translated or corrected transcript, include that work time in your post-production phase.

³ YouTube "About" (2021) <https://www.youtube.com/intl/en-GB/about/press/>

1.2.2 Know what you have and what you'll need

Once you've decided to create educational content, you already have things you need to manage such as your time, your budget and your equipment.

Time. Managing your time is key to your success. During your pre-production phase get out a calendar and estimate a time frame for each production phase: pre-production, production, post-production, and publishing and promotion. Even if you change it later, with a preliminary timetable you can estimate how much time the project needs. As a rule, things take longer than you think they will so assume there will be delays in your production and give yourself a bit extra. It's always better to under-promise and over-deliver on your video release date.

Timetabling out your project forces you to break each phase down and specify its practical steps. Writing the storyboard and script may not be the end of the pre-production process. They may require the client's review and a rewrite, include it in your timetable. If someone must learn a new software to complete the project, include it in your timetable. In your production phase, book your filming location for longer than you think you need to do a single take (unless you're recording a live lecture), as you'll want to film multiple takes of every scene. The audio and video post-production work will be the most time-consuming part of your entire process, schedule enough time to do the job right. If someone must sign off on your pre-release version, add enough time for their review and further edits. In the promotion phase, schedule time to create video thumbnails, write the description text and add metadata tags.

Budget. Do you have one? If you do, write a plan that keeps each production phase under budget. Things won't always go exactly as planned. It's better to have a bit of financial flexibility in your budget than to sacrifice other line items later.

If you don't have a budget, or much of one, you can offset this by adding more time to your project or by asking for a delay in the release date. What you can't buy, you will need to find for free. If you must rely on CC-BY images, budget time during pre-production to find and organize assets for post-production. The same goes for music and stock footage; you can find appropriate CC-BY music and clips if you give yourself the time.

Equipment. Think about the resources to which you already have access and those you need to acquire. It's important to know what you can and can't do before storyboarding your content. Make a list of all the assets you can access or use. These may include, but are not limited to:

- Storage space (hard drive and/or online) for your files.
- Your project management skills.
- Free filming locations that you can use for free.
- Cameras e.g., professional cameras, mobile phone cameras, webcams.
- Software e.g., screen recording, animation software and PowerPoint.
- Images: institution's logos as .jpeg or .png, creative commons images.
- Lighting: natural and artificial.
- Sound: lavalier or boom microphones.⁴
- Editing software: do you own video editing software? If not, start the discussion to solve this problem.
- YouTube channel: Do you or does your institution have a YouTube channel? If so, do you have access and upload authorization rights, or will you need to schedule someone else to upload the video? Do you know how to upload videos to YouTube?

Your resources limit what you can do in your video (or podcast); for instance, if you don't have access to a drone, don't include a scene with a fly-over shot of your institution in your storyboards. Knowing your resources and options can also empower you to solve problems as well, such as creating the illusion of a library by using a colleague's office rather than filming in a real, noisy public library.

⁴ If you have a limited budget, high-quality audio recording equipment should be your top priority.

Skill sets. Do you and your staff possess the skill sets needed to complete your project? These skills can be acquired by watching tutorials on YouTube if you add the time needed into your project timetable.

Plan B. Be open to changing your plans if circumstances, expert availability, or your budget changes. Perhaps you can't get the expert you want, or they are unwilling to be recorded. Can you instead offer to work with them on a script and then you will do the voice-over work? Adapting quickly to changing circumstances will keep your project on schedule.

1.2.3 Make good use of YouTube

You've finished your video. Great! But you're far from done. There's work you must plan for and timetable to ensure your video is findable, properly referenced, and promotes your institution. Here are some tips:

Branding. What you upload reflects on your institution. Make a conscious decision as to how you will communicate your brand. Perhaps that means adding a branded intro, or a logo watermark in the corner of the video. If you don't already have a branded opening and closing, add the time to create some and to secure approval from the higher ups.

Video description text and links. Think carefully about what text should go here. Got links? List them in the description box and include that information in your script. Add other references consulted or hyperlinks to cited articles here, especially if you credit a work in the video. List creative commons license or permissions for copyrighted works e.g. images, video or music, the type of license and the source. Social media links should go here as well.

Tags. YouTube uses tags, also known as keywords, to help viewers find the right content. Make your content more findable by adding phrases and keywords in the appropriate area of the creator's studio.

Video thumbnails. Creators can upload a thumbnail image (within specific dimensions) of your video. Designing your thumbnail requires its own thought and planning. It is part of your branding strategy, that means you should consider the whole look of your YouTube page.

Playlists and cards. If your content can be organized by concepts or themes, use Playlists to help people find related content. A Playlist is a list of curated videos. Turning on the Cards allows you to select a timestamp within the video to have a pop-up appear on-screen that recommends another video to the viewer. Use these built-in promotional features to your advantage.

Comments section, ratings. Short version: Turn off comments and ratings. Longer version: Reading, screening, and replying to YouTube comments is time-consuming work that will have to be done for years into the future, and it looks bad to have unanswered questions sitting under your video. Instead, direct users to your website in the script and description box. In my opinion, there is no reason to turn on video ratings. The purpose of your videos is to put information out, you're not seeking validation.

Promotion. How will you drive traffic to your video? Will you advertise it on Twitter and LinkedIn, embed it in your website, or use it at talks in an offline format? If you plan for a short teaser promo video, plan its creation during your pre-production time (see the social media chapter for more information).

1.3 Project management skills are necessary

If you're making educational content for the first time and don't have extensive project management experience, I highly recommend you immediately invest in your own project management skills. A.S.A.P. The sooner you apply a project management approach to your content creation, the better. As the director, you must manage four different production phases at once, and that's assuming you're only making one video or podcast. If you're making a multi-part video or podcast series, or if you have multiple experts to record, it will be impossible for you to keep every detail of every video in your head. Take the time to learn project management techniques and adapt them to your video or podcast production. You will save yourself an enormous amount of time and stress later.

1.3.1 Kanban for project management

When I was assigned to make a series of videos, a colleague recommended Kanban for project management. Kanban was developed by Toyota and was later adopted by major tech companies. Kanban is not the only project management system out there, but it was the one I chose to use.⁵ I binge-d Kanban YouTube videos until I understood the structure of Kanban, its logic, and how others used it to deliver products on time, on (or under) budget, and to the expected standards. It was the perfect solution for the overwhelming number of tasks I had to manage. I bought 4 poster boards to visualize different stages of my work. The video production phase poster boards were:

- Pre-production – planning the video, booking rooms, organizing supplies and online storage, logistics, storyboards and script writing, collecting images, and planning rehearsals.
- Production – recording the main video and audio, the animation work, recording voice overs, recording the social media promotional materials, recording b-roll.
- Post-production – video and audio editing, picture-in-picture work, special effects, branding, adding music, obtaining final sign off or approval.
- Publishing and promotion – uploading the final version, creating thumbnails, adding the video title, description text and keywords, creating playlists, making the video public.

Each poster board was divided into four columns with a specific ‘completion criterion’ to be met before a post-it could move to the next stage. The four phases on each poster board were: 1) To Do, 2) In Progress, 3) Completed and 4) Approved. Individual tasks were visualized using multi-colored post-it notes. Each task’s post-it note listed the task to be done and as a task moved closer to its final form, its post-it note was moved to the next column. I also had a separate ‘Problem’ space on each board for tasks that needed special attention. Tasks went into the Problem area if something outside of my control was holding things up or required a solution beyond my pay grade (e.g. authorizing additional travel funds).

Once a task had a post-it note, ascertaining where it was in the workflow was as easy as locating it on my Kanban board. Here is an applied example. I needed to organize meetings with the developers of six new software solutions and create individualized storyboards advertising their digital tools. Two worked in Bergen, Norway, two were in Tilburg, The Netherlands, and two were at my home institution. On my Pre-Production Kanban board, I wrote their name and their tool name on six post-its along with the goal, e.g., ‘[Name and Tool] - Agreed Storyboard’. At first, all six were in the To Do column. As meetings were added to my calendar, each post-it was moved to In Progress.

After the meeting and if a storyboard was agreed, the post-it would be moved to Completed. If a second meeting was needed, the post-it would be moved back into To Do (if a second meeting date was not yet agreed upon) or In Progress (if a second meeting date had been agreed upon). Only after the storyboard’s final version was agreed between myself and the developer would I move the post-it into the Approved column. There were times when, in single meeting, if the developer and I agreed on the storyboard, so that post-it move from To Do over to Approved. It’s not important that every task spends time in every phase. What’s important is that you know how far along the task is. If I ever needed to remind myself as to the progress of a specific tool’s storyboard, I would look at my Pre-Production poster board, find the right post-it, and assess

Kanban Testimonial

In 2018, I was tasked with creating over 20 videos for an EU project, due in 10 months’ time. The videos were a mix of live lectures, online tools tutorials, and webinars. Although I’d made videos on my own, I now had to manage myself, an assistant, coordinate with experts and provide regular progress updates. When I understood the enormity of the project, my first step was to learn how to manage my projects with Kanban. Without a doubt, knowing Kanban was key to meeting people’s expectations and my deadlines.

⁵ Scrum or Agile may be well-suited to video creation, however I know Kanban is.

how close it was to being done. If my staff needed to track a specific aspect of production, they consulted the board rather than taking up my time. And one last thing: it looks impressive when your boss, or the client, looks at your Kanban boards and can see you have the job completely under control.

How do you determine which tasks become post-it notes? I identified those elements needed for the final product, then reverse-engineered the main steps to achieve that outcome. Those were then my milestones. For instance, if I was to publish a live lecture recording, I want the final product to have the best quality audio file possible. That is my milestone. Therefore, I need time reserved to clean and edit my audio files in Audacity (a program we'll explain in a later chapter). I created a post-it called Final Audio for the post-production phase. Reverse engineering the final audio file meant I needed the right audio files to hand, I need it stored in the right place, so I add Create Online Storage for Audio as a post-it to my Pre-Production Kanban board. I'll need the audio files themselves and that means I need equipment for recording and means to upload them. I add an Audio Equipment Obtained post-it and a Test-Run Audio post-it to my Pre-Production Kanban board. Record Content and Upload Audio become milestones in my Production phase of work. Later, I cross-reference the milestones with my calendar and mark each milestone on a date (see more on time management below), working backwards from the due date to fit them all with the time I allotted to my project.

You now have a project management solution and strategy to successfully organize the elements of your multi-stage video or podcast project. However, Kanban is only a project management solution; it isn't a time management solution. To deliver your video or podcast on time, you must combine it with a time management strategy that tracks your tasks through your Kanban phases. In the final section of this chapter, I describe the time management strategy I employ.

1.3.2. Project time management

If you're new to video creation, you may think of it mostly in terms of the recording process: lights, camera, and action! In reality, filming should take the least amount of time if you organized your project well. The actual recording session might only take three or four hours, or a single day (apart from animated videos). In comparison, you will probably spend weeks in the pre-production and post-production phases. In addition to planning, you must do all that work within a set amount of time. But how much time will you need for each phase? Unlike with Kanban, I don't have a formal time management program to recommend to you. My time management skills were developed from working in event planning. I transferred my tactics for ensuring an event went off as planned on the day to delivering my video projects on time.

If your video involves a person talking to a camera, and this is your first project, I recommend you apportion your time roughly as 40 percent for pre-production, 10 percent for production, 40 percent for post-production and 10 percent for publishing and promotion. Animated videos with narration have their own time needs and are addressed in a later chapter. For now, I'll use a live video shoot as an example of how to plan your time. Here is an example to better illustrate what I mean:

- ➔ Determine the date on which the video must be published. Note it on a calendar (e.g. 31st Dec).
- ➔ Ignore that date, go back in your calendar one or two weeks before that deadline and make that day your internal due date (e.g. 15th Dec).
- ➔ Estimate the time you have between now and your internal due date. Let's say you have six weeks until the internal due date.
- ➔ For a six-week time frame, I would allot two weeks to pre-production, one week for production, two weeks for post-production and one week for publishing and promotional related work.

Within each production phase, determine the due date for that phase's completed product (e.g., finalized storyboard and script, video and audio recording completed, final version of the video signed off for publication, video and all supporting information uploaded to YouTube ready to be made Public). These should match up with or map onto the milestones you identified in your Kanban planning.

For instance, if your pre-production goal is a final and approved version of an animated video script, you need time to: schedule a meeting with an expert to identify the learning outcomes and agree to a storyboard for the visuals. If someone else must sign off on the learning outcomes and storyboard before you can move forward, schedule the time needed to get their approval. Next, someone must write a script based on what was agreed, assemble images for the production phase. Schedule time for that. After the first draft of the script is written, you may need to have someone (perhaps the expert) read the draft and make changes. Schedule a time frame for script review, then schedule time for the script rewrite and final sign-off.

The amount of work needed in each phase also depends on what you're recording. If you have to record a conference keynote address hosted at your institution, you have less to do than if you are asked to design a five-part video series. However, for this example I recommend you not think of filming the address as a purely passive process. Get the expert's .pdf slides and find a way to integrate them into the video. Set up multiple cameras to give viewers more than a single, static image for 90 minutes. That said, the more dynamism you add to your content, the more planning and time is required.

With clear milestones to achieve, plot your milestones on a calendar and work backwards from their due date to estimate what needs to be done, and by when, in order to stay on schedule. My strategy is quite simple:

- Start with the internal due date and treat it as the real due date.
- Identify key milestones for each of the four phases.
- Organize phases and milestones chronologically, accounting for sequential work (e.g. you can't edit the audio until after you record it) and allot a reasonable amount of time to the task.
- With a calendar to hand, from the internal due date count backwards and plot milestones on the specific dates by which they must be started and/or completed.
- If, after these calculations my project start date is sometime in the future, I can complete the project by my internal due date. Yippee! (Given this, I can afford some flexibility scheduling various per-phase milestones.)

Alternatively, if, after these calculations, my project start date is a date in the past, I freak out because this project is behind schedule before it has even started.

What should you do if your new project can't be done on time? If I determine I can't reasonably complete the project by my internal due date, I would not rescale my work to the external due date. Rather than use up my one-week safety net, I would first try to rescale the work so I can still reach my milestones by my internal due date. For instance, say that after agreeing on a storyboard with the expert, we must get my supervisor's sign off. Can I schedule a storyboarding meeting with my expert for 2 pm with the goal of having a draft storyboard by 3:30 pm, and at 3:30 pm we both meet with my supervisor to get feedback, agree any changes, and get her approval by the end of the meeting? If so, a process that I would normally allot one week to complete is reduced to a day.

If I can't reasonably restructure and optimize my work to deliver on time, I would take the problem up the chain of command, present my problem, and offer the following solutions:

- Ask for an extension and propose a new external due date.
- Ask for additional staff support, if such support reduces my workload.
- Pitch a scaled-down or simplified version that I could finish on time.

Using Kanban to manage the moving parts of my project, and my method of modularizing work into milestones, plotted backwards from the internal due dates, keeps my stress levels lowered. It is my hope that by using and adapting these project and time management ideas into your workflow, your stress levels will be reduced too.

1.4 Conclusion

You should now have new ways to think about your video or podcast project and a framework for organizing video creation as project management. You should also have a realistic idea for how to manage your time to complete your project. Perhaps, after reading this chapter, you will scale-down your vision, or perhaps you've

been inspired to think bigger and more creatively. Regardless, you are now making those decisions based on an informed perspective of what you can do with the time and resources you have. If you are, then I've succeeded in my goal of setting you up for success.

My final recommendation for first-time directors is that you re-read this chapter at later dates. For instance, after you finish reading this handbook, re-read the sections on project and time management. As you get a better handle on what your final video or podcast product will be, you'll adapt my examples to the real milestones you are confronting, and that is different from thinking in the abstract. The next chapter reviews the video pre-production phase.

Having completed this chapter, you should now know the:

- benefits of communicating educational information through videos;
- advantages of posting your content to YouTube;
- practical questions you need to answer before you start your project;
- assets you already have and which you will need;
- reasons project and time management skills are necessary for success.

To check your understanding, write out answers to the following questions:

- Which of the following advantages is most important to you, and why?
 - Content flexibility and modularization.
 - Controlling what the viewer sees.
 - An audience learning at their own pace.
- Which YouTube features will you use to organize and/or promote your content?
- List three to five preliminary learning outcomes for your video or podcast.
- Can you give precise answers about your project's timetable, budget, and file storage locations? If not, what do you need to do to get a handle on them?
- What project management approach will you use?
- What is your time management strategy to ensure an on-time delivery?

2. Storyboarding and Scriptwriting

By Kristi Winters and Paula Schäfer



Image: "Untitled"⁶

Ok, educational video directors, we have some good news to start this chapter! If you have experience writing educational content, or writing peer-reviewed articles and book chapters, you already possess the skills needed to create great educational podcasts or videos. In this chapter, we help you shape your existing skill set to a new medium. If you haven't written content for a classroom or a publication, don't worry. We provide a structure to guarantee your key learning outcomes will be retained by your audience. We help you understand your content format delivery options, structure your content effectively, use visuals to reinforce key points, and provide tips on storyboarding and script writing focused on your learning outcomes.

Nota bene: most of the content in this handbook assumes you are creating visual educational content; however, some readers may want to create podcasts. Podcasters can modify our recommendations on script writing and structuring an interview to achieve their intended learning outcomes.

By the end of this chapter, you will know:

- How you can combine different forms of audio and video recording to create several content delivery modes, and some of their advantages and disadvantages.
- How to structure your educational video to be most effective.
- What a storyboard is and how to create one to plan your educational content.

⁶ By Keagan Henman <https://unsplash.com/photos/pPxJTxfV1A>.

- Advice on script writing and linking your script text to your storyboard.
- A checklist to help you assess if you are ready to move to the pre-production phase.

2.1 Our assumptions

In what follows, we assume that you are well-versed in the topic you’re making into an educational video, or you are collaborating with an expert. If you are both the topic expert and the video creator, you can complete everything we suggest in this chapter on your own. However, if you are the director but not the topic expert, it is vital that you meet with the expert to discuss the video or podcast content. Your expert’s level of involvement will vary based on the output format: if you are recording a live lecture, you will work with (and perhaps slightly modify) an existing lecture. However, if you are creating a spoken-to-camera video, you and your expert should shape the content to fit the educational video structure we’ll give you. You can give this chapter to your expert to read, however, they might not have the time, so always consider final versions of the storyboard and script as your responsibility.

Another point to keep in mind, if you are new to all this: don’t be too frustrated if your video isn’t as glossy or shiny as professionally produced videos you can find on YouTube. Those channels have funding dedicated to professional equipment, studios and sets, not to mention staff with years of experience. In contrast, you are probably working with non-professional equipment (e.g. your mobile camera), using open-source software, without any formal training in filmmaking, and an expert who may never have been filmed before. You will inevitably make mistakes, and you probably will have to fix things in post-production. Do your best and don’t let the perfect be the enemy of the good. Your goal is to communicate the learning outcomes you’ve identified. If your institution or your funders feel you’ve done that, you accomplished your goals. You will learn from each video project you create, and you’ll use that knowledge and experience to make your next video better.

2.2 Your content and mode of delivery options

By content delivery, we mean the form your content will take. Below we review the different modes of content delivery. Table 2.1 shows how different audio and video formats can be combined to create different types of educational outputs.

Table 2.1: Different modes of content delivery using combinations of audio and video types

Video type:	None	Computer Based	External Camera
Audio Type:			
Studio Recording	Studio recorded Podcast	Screen capture tutorials or Animated videos	To Camera talks or interviews
Live Recording	Live recorded Podcast	Webinars	Live lectures

2.2.1 Podcasts

Podcasts are audio-only files that can be streamed or downloaded from a hosting service, such as iTunes, Spotify, or hosting sites such as Spreaker or Podbean. There are also podcast series posted to YouTube with a static image, usually a branded image.⁷ Podcasts are not the focus of this handbook; however, since readers should be aware of their pros and cons, we review them in depth here.

⁷ An example educational podcast: “Interview with Educational Neuroscientist Dr. Jared Cooney Horvath | Care to Learn Podcast #5” (2018). <https://youtu.be/1jNT5lhqngs>

Podcasts series are perfect for learning about new topics or subjects. They are inexpensive to produce because the equipment and location needs are minimal. However, podcasts have an even greater attention-keeping challenge than do videos. Many people listen to podcasts while doing other things, such as commuting, washing the dishes or walking the dog. Their attention may wander as they interact with the rest of the world. To keep people's attention, we recommend an interview format as a good option for first time podcasters. Interviews have a natural dialogue structure that draws people in. The host should work through a predetermined set of questions based on the intended learning outcomes, asking questions the expert can explain at the level for the intended audience. This need not be entirely scripted; however, a podcast series should build toward the final learning outcomes, with each podcast having its own subset of identified learning outcomes. The content to be discussed, definitions given, examples cited, should be planned so the listener can absorb the learning outcomes.

Radio shows and podcasts use musical cues or sound clips of real life between segments to signal that something new is about to be discussed. Do the same in your podcasts. Engage the theatre of the mind. Examples include the sounds of someone typing on a keyboard to signal an office setting, or the clatter and conversation of a coffee shop as if you were meeting someone for a chat. In addition to refocusing your listener's attention, these effects professionalize your podcasts. Remind your listeners if you provide a supporting .pdf or other digital resources with your podcast series and repeat the website address where they can access those materials at the start and end of your podcast.

If you want your series to be widely available, do some research into how to publish on iTunes, Spotify or other podcast hosting sites. Publishing your episode files, plus the episode description, credits, guest information and metadata to a podcast hosting website is time consuming! Before deciding on a podcast as your format, research your hosting options and their requirements. Create a publication strategy for your podcasts. If you want your podcast to be findable on popular podcast providers, know the technical requirements for each hosting site, and include the time needed to upload the same podcast and all its supporting information to multiple sites in your publication and promotion phase timetable.

Advantages. Podcasts are inexpensive to produce in terms of equipment, software and the time needed to create them. Podcasts have much smaller file sizes than do videos, which might be relevant if your hosting site has storage limits. Podcasts are well-suited to interview-based formats, and the interview format allows for both introductory and advanced topics, to topics that can be explained without reference to visual aids.

Disadvantages. Podcasts still require significant planning, given the learning outcomes are hampered by a lack of visual reinforcement. For instance, a podcast on the history of European data archives is fine for a podcast. However, one that explains a Python script to rehydrate Tweets needs visuals to contextualize and reinforce the information. Another disadvantage of podcasts is that there are several places where you could host your podcast. This means you may have to upload it to multiple hosts for it to be widely available.

Equipment. To create a professional sounding podcast for online interviews, get a studio microphone with a mic stand, a pop-filter, sound absorbing materials, online meeting software (e.g. Google Meet, Skype, Zoom), and the free audio recording and editing software Audacity. To record someone outside the office setting, get two lavalier microphones, each connected to one dedicated mobile phone. Record the guest audio on one phone (or digital audio recorder), yours on another, and mix the two files in the post-production process. Stay away from hand-held microphones. Even if your microphone comes with a wind filter (the foam microphone cover), the vibrations caused by your hand moving on the microphone can be picked in the audio, and the act of moving the microphone between the interviewer and the guest can produce uneven audio, meaning information may be lost. See the Audio chapter for more information.

2.2.2 Studio audio recording with images

Screen capture tutorials. Recording your computer's desktop is an ideal way to teach people how to use software, a website interface, or how to download and install software.⁸

Animated videos. For this handbook, we classify videos made up of a series of still pictures as 'animated' because the work of planning, assembling and displaying images is the same whether the images move or not. Displaying PowerPoint slides with a voice over is a common format on YouTube, but it is not a very exciting one. Think creatively about how to add visuals and movement to the screen. In the storyboarding section below, we explain why you should avoid repurposing conference presentation slides 'as is' and instead create a visually engaging educational video.⁹

Equipment. For both modes of delivery, you should have a studio microphone, Audacity (or a proprietary audio editing software) and a video editing software. If you want to create traditional animated videos, there are paid software products such as Doodly or Toonly you or your institution can buy or get as a subscription service.¹⁰

2.2.3 Live audio recording with images

Webinars. Webinars can be characterized as live talks, broadcast via an online software, with accompanying on-screen visuals, often given as a live event and/or recorded for later publication. Webinars are extremely flexible tools for learning. They can be used to introduce people to new topics, to present advanced information to an expert audience, or to train people in software.¹¹ Webinars provide an opportunity to interact with the speaker (e.g. using a chat feature). Usually speakers share their screen and display their PowerPoint slides.

Equipment. We recommend using a studio microphone, not a laptop's or desktop computer's build-in microphone. Access to free or paid webinar software is also required. If you are using a free service, such as Google Meet, you will need separate desktop recording software to create a copy to upload later. See the chapter seven of this book for more information on webinars.

2.2.4 Studio audio recording with a camera

To camera videos and documentaries. These are the most complicated, but also the most visually engaging, form of educational content delivery. We classify these as 'studio recording' because, as the director, you have more control over the recording on a set or on location than with a live talk or public address. Your set can include equipment to reduce room echo, you can build a boom and fit a mic to record back-up audio, and you can do multiple takes if there is background noise or other sound problems.¹²

Equipment: The equipment needed for filming is covered extensively in future chapters.

8 Watch "Audacity: Complete Tutorial Guide to Audacity for Beginners" (2015) <https://youtu.be/aCisC3sHneM> as an example.

9 To see the Ken Burns effect in action, watch this video excerpt from Ken Burn's Civil War documentary: "Ken Burns Effect: Explained & Illustrated with Gettysburg Address" (2014) <https://youtu.be/WjdWvmjgBa0>.

10 The lead author of this chapter purchased both Doodly and Toonly. Using Doodly she animated this video for CESSDA: "First steps towards data curation - A Day in the Life of a Data Archivist" (2020) https://youtu.be/w_B1CDWUx34.

11 You can watch this as an example: "CESSDA Webinar - Archiving Social Media Data" (2020) <https://youtu.be/EPP153H2Jow>.

12 You can watch a CESSDA video done in this style here: "Mapping European Data Using Georeferenced Data" (2020) <https://youtu.be/1TaHee70J88>.

2.2.5 Live audio recording with a camera

Public addresses, live lecture recordings and keynote speeches. Recording a talk live given by an expert is an inexpensive way to preserve their presentation. These videos are less complicated than a set production, but you have less control over the setting, lighting and acoustics.¹³

Equipment: The equipment needed to film these is covered in future chapters.

2.3 Selecting the right mode for delivering your content

If you have the authority to decide the form of the educational content, there are three factors we'd recommend you consider. First, identify your intended audience; second, set out your learning outcomes, and third, identify how comfortable your expert is with being on camera. We take these in turn.

Who will watch the content?¹⁴ Is it meant for specialists, a general audience, or students? The more interest your audience has in the topic, the more you can demand of their attention span.¹⁵ When determining your individual learning outcomes, connect them to your overall goal. Do you want people to learn a task, introduce them to a new topic, or gain depth in their understanding of something technical? These considerations may determine which delivery formats are best suited to achieve your goals.

After specifying your intended audience and learning goals, consider which formats best suit your audience's interest and how they learn. If you're creating a software training video for international social survey staff that harmonizes cross-national occupation using the International Standard Classification of Occupations, a 60-minute webinar to introduce the software interface and demonstrate a few use cases works fine. If you're introducing the general public to a new topic, for instance geo-referenced social science data, you need a format that can incorporate illustrated maps to help viewers visually connect with an abstract concept.

The more visually stimulating a video is, the more engagement it will have. Creating a video version of a one-on-one conversation with the viewer is the most engaging. Humans find it easy to focus on other humans talking to them, their eyes will stay focused on the screen. The educational videos that are the least engaging are PowerPoint slides with blocks of small text. Yes, we are talking about the ever-popular academic webinars where an off-camera expert speaks over a text-filled PowerPoint slide for several minutes at a time.

These are the least engaging because of what people do with their eyes. We all read a slide's text faster than any expert can explain it. Picture it in your mind: the expert transitions to a new slide. You, the viewer, tune out from what they are saying as you read through the slide. You absorb the main points, then tune back into the expert's verbal explanation. If an audience member absorbs the main points within 15 seconds, and your expert takes 5 minutes to explain the slide's content, the temptation to mentally check out is strong. Your viewers may drop their attention level and 'half listen' while they check their phone or reply to a work email, and they end up missing information. Avoid giving people reasons to mentally check out of your educational content.

A final consideration is the willingness the expert to appear on camera. Some people are more comfortable on camera than others, some have media training, and some people are only willing to make an audio recording. Work within their comfort zones and always play to their strengths rather than asking them to develop new skills. Finding a mode of delivery that puts your expert at ease makes the recording process much easier and a more positive experience for them. Experts have experience speaking extemporaneously on their topic. Rather than asking them to write out and memorize a script (and believe us, this is a very different skill set from extemporaneous speaking), work with them to identify the learning outcomes and allow them to explain it in their own words using 2 or 3 takes. Select the take that worked best.

13 An example a live educational talk can be seen here: "ESRA Lecture - Consent in data collection" (2019) <https://youtu.be/tuNOyycFGNo>.

14 For a longer discussion on how to anticipate the needs of your audience, see chapter one.

15 We define audience attention as watching the video until it ends and paying attention to what is said. For podcasts we mean the audience keeps up with nearly every word spoken during the podcast.

2.4 Start with your learning outcomes and ‘Chunk, Chunk, Chunk’

You may take on the roles of both the expert and the video creator, or you may be guiding people with expertise to transform what they know in a digital form. Even if your role is strictly ‘behind the camera’, it’s useful to have a basic understanding of the learning outcomes for the video. A working understanding of the content can help you transform it, accurately, into a digital medium. Your job as an educational content director is to make sure you synthesize form and content to be maximally effective.

Early on, write a list of your 3 to 5 intended learning outcomes. Maybe up to 7, but not more! Everything in the video, every image, every line spoken, should reinforce the learning outcomes. If a scene or part of your text cannot be directly linked to a learning outcome, does it really need to be there? Asking this question keeps your educational content focused. If you have more than 7 take-away points, think about restructuring your content and break it up into multiple sections or multiple videos. A video series or longer videos divided into segments serve the same function of focusing on three to five main points before moving on to the next segment.

For videos that will significantly exceed twelve minutes, can you restructure the content into a series of standalone, but interconnected, blocks of information? Even with the best intentions, most people cannot give the sort of in-person level of attention to an on-screen PowerPoint slide with blocks of text, slide after slide, for sixty minutes. Compare an in-person lecture to watching a video. Everything about the in-person experience primes you to focus on the person, whether it is how the room is set up, the peer pressure of people around you taking notes, or knowing you will have to replicate the software functions you’re being taught in the next lab session. Not so with watching a video while you’re on your own. The best way to deal with this content delivery mode challenge is to embrace it. Use the challenge of limited attention spans to streamline and create a clearer structure for your content. You can do this using a technique called ‘chunking’.

In chunking, individual pieces of information in a set are broken down and grouped together into a meaningful whole. This structure makes it easier to retain in short-term memory. Break your long content down into logical sections and identify the key three to five points in each section. By repeating and explicitly linking the same chunks structure across your videos, you give your audience a roadmap to learning that can help them retain the information.¹⁶

2.5 The educational video structure

Regardless of your chosen format, we recommend you start out using this one-size fits all educational video structure we’re about to give. This is the part of the video or podcast process that you don’t have to think about: your challenge is to figure out the best way to fit your content into the sections. If you watch professional video series on YouTube, you can identify each of the sections we explain below.

If you’ve written peer-reviewed articles, the structure is similar to research articles. It is a modified form of ‘Tell them what you’re going to tell them, tell them, then tell them what you told them’ for videos.¹⁷ We explain each element of our recommended structure below. There is limited flexibility, some are optional or can be re-ordered (those marked with *), however all the other elements should be included somewhere.

- 1: Burning question*
- 2: Introduction of the Expert (“Hi my name is.../I am a social scientist at...”)*
- 3: Brand Intro*

16 To learn more about chunking read this article by Malamed (2019) https://thelearningcoach.com/elearning_design/chunking-information/.

17 To see this structure in action, watch “Dissecting The Camera: Crash Course Film Production #4” (2017) https://youtu.be/ivCBfJ1v_Qw from the Crash Course channel.

- 4: Introduce Learning Outcomes (“In this video, you will learn...”)
- 5: Educational Content (structured into chunks)
- 6: Restate Learning Outcomes (“What you’ve learned”)
- 7: Call to Action (“For more info...”)
- 8: Brand Outro*

Burning Question. People decide within the first 10-15 seconds whether or not to watch your content.

Grab your viewers’ attention by posing a question or with a statement that intrigues them. We refer to this as the ‘Burning Question’. The ‘Burning Question’ gives your audience a reason to keep watching. Grab their attention by posing a question while promising an answer or solution. If your video starts by identifying a problem and/or a need your viewer has along with an answer and/or a solution, they have a reason to invest their time in your content. We recommend all your content starts with a Burning Question, even live lectures or a keynote address. However, experts may not want to start their live talks this way and for that reason we’ve marked it as optional. Here are examples of Burning Questions for those working with social science data:

“You want to link survey data with social media data for analysis, but you aren’t sure how. In this video I explain how you can combine these data resources to answer your research questions.”

“Are you writing a research funding proposal that requires you to create a data management plan, but you aren’t sure your plan meets the funder’s requirements? In this podcast series we review each step in CESSDA’s Data Management Expert Guide, an online resource that explains the best practices for planning your data management.”

Expert Introduction. After the Burning Question, your expert can then introduce themselves or you can show your institution’s branded introduction clip and then start the main video with the expert’s self-introduction. You can wait and have your expert introduce themselves at the end of the video, but I recommend against this, since giving a person’s expertise is a way to signal to the audience this person knows what they are talking about and they will learn something.

The reason why we recommend against opening your video or podcast with an expert introducing themselves and talking about their experience is that people care about their own problems first and foremost. The Burning Question puts the focus on the needs or desires of your viewer. If you begin with your expert’s name, institution and background expertise, you’re using those valuable first 10-15 seconds, when people are deciding whether to click away, not addressing their self-interests. After they are interested in solving a problem they have, they will feel more confident in the answers or solutions given if the person is an expert on the topic.

The self-introduction should not be more than a line or two and can be supplemented with a visual special effect called a lower third. The lower third is text in the lower third of the screen that includes the expert’s title (if relevant), name, and institution (or other title that establishes their credibility). This technique is commonplace in documentaries and you can get inspiration on how to present this information by watching how others have done it. Here are examples of how you can include the expert introduction in, or follow on from, the Burning Question:

“You want to link survey data with social media data for analysis, but you aren’t sure how. I’m TITLE AND NAME, author of TITLE OF ARTICLE ON THE TOPIC, and in this video, I explain how you can combine these data resources to answer your research questions.”

“Are you writing a research funding proposal that requires you to create a data management plan,

but you aren't sure whether your plan will meet the funder's requirements? I'm NAME OF HOST and as part of this podcast series on data management I am interviewing NAME OF GUEST, a contributor to CESSDA's online Data Management Expert Guide, and she/he/they will explain some best practices for planning your data management."

When it comes time to add in the storyboard's visual information to your script, write a description of the scene above its corresponding text. Indicate who is speaking the lines.

EXAMPLE SCRIPT:

B-ROLL OF HANDS TYPING ON A KEYBOARD, VOICE OVER

Expert: "Finding the right European social science data sets can be a daunting task, but CESSDA's Data Catalogue makes it easier! In this tutorial, I'll show you how to use the CESSDA Data Catalogue's search function to discover data sets to help you answer your research question."

FADE TO Expert. MEDIUM SHOT, TO CAMERA

Expert: Welcome! "I'm TITLE AND NAME, a software developer of the CESSDA Data Catalogue, and today I will take you through the website's search function."

FADE TO branded intro.

Branded Intro. Publishing online educational content introduces your experts and your institution or organization to a new audience. It is evidence of the positive impact your institution has in the research community, and/or to showcase the expertise your institution provides.

You do not have to create a special video clip with your organization's logo. However, if you decide to create a stock introduction video, or a soundbite at the start of every podcast, it should not last longer than five to ten seconds. Ideally you want to start your video with a preview or the burning question. The first few seconds should be used to give people a reason to keep watching. That said, it is common to start videos with the logo, therefore your institution or client may choose that format. You can reuse your logo as the outro of the video by adding a voice over inviting viewers to visit your organization's website or promote your institution, a website or a service.

Video Content Preview ("In this video..."). Similar to the role of the introduction section of an article, this section of your educational video should provide a road map of the video's contents. This review will help viewers understand the scope of the content to be covered and how you will move from topic to topic. As the saying goes, 'Tell them what you're going to tell them, tell them, then tell them what you told them.'

Thematic Educational Content (structured individually). In this section, the viewer or listener is presented with information that maps on to your identified learning outcomes. In addition to delivering the information verbally, think about ways you can visually represent the concepts in your script. This might include using b-roll (picture of hands typing, two people talking about a piece of paper), a screen-recording of the software or website interface, or by incorporating a still image using the Ken Burns effect to keep the viewer's eyes engaged. Aspiring film directors are given the advice 'show it, don't tell it' but when it comes to educational videos, use audio and visuals to reinforce the ideas you want people to remember. Our advice to you is to show it and tell it!

Video Content Summary ("What you've learned"). After you've presented your information, solidify the learning outcomes in your audience's memories by reminding them what they've learned and which points they should remember, just as the closing paragraphs of an academic article should review the article's main take-away points and connect its findings to existing results or future research. This is your chance to reinforce what they are meant to remember. Here you will 'tell them what you told them' and set them up for your Call to Action.

Call to Action ("To get more info..."). When you or your expert have summarized the learning outcomes, that's

not the end of the video. You still have people's attention, so use it! Promote another video on your channel, direct them to your institution's website, or inform them of your institution's services. This can also be done as part of the outro, but if your expert has a call to action related to the video's content, add it here.

Branded Outro. An optional way to end your content is to have a logo with your institution's brand. You can think of this like a credits section. It is the perfect place to credit the institution that supported the creation of your educational outreach, acknowledge your funders, and promote websites again. Here are two example texts that could be added as voice over audio with soft background music over an institution's logo:

This video was made possible through the support of NAME OF INSTITUTION. To learn more about this and other educational support resources, visit our website at WEBSITE OF INSTITUTION.

This educational video series is part of the PROJECT NAME and was funded by NAME OF FUNDING BODY, as part of GRANT PROGRAM, GRANT NUMBER. To learn more about our project and its outputs, visit NAME OF WEBSITE HERE.

2.6 Time to storyboard!

A storyboard helps you visualize what your viewer will eventually see on the screen. The reason we've spent time explaining your video format options, followed by the structure of educational videos, is to help you imagine and visualize the different scenes for your storyboards quickly and with confidence. After this section, we review a workflow for writing your script and connecting a storyboard to a script. However, if you have the option, we think the act of visualizing your video content first is best for first-time directors.

A storyboard is a series of empty rectangular boxes on a sheet of paper, or panels, perhaps three or six per side. They represent what the viewer will see on the screen. Oftentimes they include places for notes, where you can add scene titles and sketch out what will be shown in each scene. We used the storyboard in two ways. The first was to plan our shots. For instance, we would often open with our expert in the center of the frame using a medium shot. The second was to make decisions about the inclusion of images or other footage, such as a screen recording of a website. If we needed to add a slide with supporting text or an image, we drew out a scene where our expert was pushed to the left half of the frame, leaving a large empty space on the right side. In post-production we added in the appropriate slide or image in this space, however we had to plan for that space in our storyboard to get the right shot when we filmed it.

Storyboards are useful regardless of the video style you are asked to record. If you are tasked with recording a keynote address or a public talk, get a copy of the slides or an outline of the talk in advance so you can plan. With copies of the slide you can plan for the editing process and when you can cut away from their talk and drop in a slide while the speaker explains the slide's content. This has the advantage of breaking up the visuals and ensures the viewers can see what the audience saw. A word of warning: filming slides projected on a screen won't be picked up well by a camera set up at a distance.

Don't give into the temptation to cut corners and simply show the conference presentation slides alongside the speaker's audio. It is best practice to avoid this when you can, although it may not be an option due to time and budget constraints. Why are text-filled slides a bad thing? First, they require your viewers to decide between reading the slide and listening to what is being said. Second, leaving up a slide filled with text for several minutes will be boring to look at. The solution is to show your audience only the text the speaker is addressing. The way to deal with this in your storyboard might be solved with the following strategy: if the slide has three bullet points, copy the one slide three times in PowerPoint. Edit the first slide to show only the first bullet point, delete the other two. Cut back to the expert talking until they come to their second point. In the second slide, leave the first two bullet points and delete the third. Cut back again to the expert's

explanation. In the final slide, leave it as the original slide with all three points, and then cut to your expert's explanation again.. Make similar plans to pace the text presented in the slide. The storyboard is the perfect place to plan this sort of work.

Remember, the purpose of a storyboard is to help you – and anyone working with you – to visualize what the final version of the video will look like so you can all work towards a common vision.¹⁸ Next, we take you through an example of how creating a good storyboard will be useful to you during the pre-production, production, and post-production phases.

2.6.1 How to use storyboard panels

If you use the educational content structure we gave you, you won't have to think about what content goes into which of your storyboard panels (those empty boxes on your storyboard sheet). This should be the easiest part of your content creation: you simply dedicate individual panels to each of the phases in the structure we've explained, and you can always adjust your storyboards by adding panels or taking panels away to fit the structure you chose. Below, we use our recommended structure as the basis for our explanation.

A good storyboard will get you the right footage on filming day. Let's say your video is about the collection of social media data. Label your first storyboard panel (or however many panels you end up planning) on your storyboard sheet as 'Burning Question'. If your Burning Question scene is the expert speaking to the camera in a medium shot, it is fine to draw a stick figure from about the elbows up in the center of the frame to represent the shot you need. On recording day, you, your crew and your expert all know you'll frame your expert so they are in the center of the shot. Simple.

Alternatively imagine you want your opening shot to include a still image that represents the topic of the video. In this case, draw your Burning Question storyboard panel so the expert takes up half or one-third of your frame (depending on how large the image is) and draw the image in the other half or two-thirds of the frame. When it comes to filming this shot, you can either frame the shot leaving an empty space in it to leave space for adding the image in your post-production work or, and this is a better option, center your expert but film them in a wide shot. More information on framing your shot is provided in the chapter on video recording. Briefly, when you edit this footage later, the wide-angle will give you the ability to zoom in on and crop the wide shot down to a medium shot. This provides more control over, and options for, how close up or far away the expert is in the frame, and balanced in relation to the image you add. Remember, you can only edit the footage you have, and that is why creating a storyboard is vital to getting the right shot on the day.

Let's make your Burning Question opener more complicated to show the usefulness of good storyboards for the editing process. In this, you want your first scene to be an extreme close-up of someone's hands typing while your expert does a voice over, describing the challenge of finding datasets. Then you'll fade to your expert speaking to the camera, introducing themselves and giving a summary of the video's solution to the Burning Question. In the first storyboard box, draw hands on a keyboard with the note 'Voice Over' under the drawing. In the second box draw your expert, using a medium shot, with a lower-third bar where their name, title and institution will appear. Above the two storyboard boxes add the label Burning Question. During the editing process you'll refer back to your storyboards to put clips in the right order and use your software's special effects to create the lower-third bar as illustrated in your storyboard.

Storyboards help everyone working on the project have a vision of what the final look for each scene will be, they aren't about the artistry of the images drawn. Our storyboards were a combination of stick figures and PowerPoint slides we'd cut out from printouts we'd made that had 6 slides per sheet, in the order of the educational content structure we'd worked out with the expert. These panels help you decide, organize and communicate who and what goes where, and when, in each scene. View and treat your storyboards as the roadmap you and everyone else will use at every stage of your video creation process, from planning to post-production.

¹⁸ For further information on this topic, the following linked video is aimed at film-makers, but it does a good job of reviewing the important parts of a storyboard: "Intro to Storyboarding" (2016) <https://youtu.be/RQsvhq28sOI>.

2.6.2 Planning your social media videos

While planning your main video storyboard, you can use the same time to discuss creating promotional materials. Discuss with your expert whether there are scenes that could be lifted directly from the planned content and repurposed for a promotional ad. Perhaps it would be most efficient to record a short promotional clip designed to be used on a specific social media account. See the social media chapter including social media platforms and their specifications. Incorporate this information and plan out dedicated storyboards and a script, if needed, to guide your work on the day you record.

2.6.3 Work smarter not harder – adapt rather than reinvent

Let's apply what you've learned about storyboarding with a case study. In our "To Camera, Expert Videos", (see *On-set and on-location recordings*, chapter five) the first thing we did was contact the expert featured in our videos to accomplish two things: to set-up an appointment for a preliminary meeting and to ask them to forward us slides or supporting materials they would use in their talk. In every instance our experts were reusing prior teaching materials, conference presentation materials, webinar materials or their talk was based on a published article. This meant that, not only did they already have slides we could use to structure the video and materials to visually reinforce what they were saying, they often had images or graphs that could be repurposed for the video as well.

After we received their materials, we reviewed them ourselves from the perspective of video creators. We printed out the PowerPoint slides (6 slides per page), cut them out and taped them into the storyboard panels in the order we thought made sense. We used the educational content video structure and customized it to the content. When the expert arrived for the meeting, we handed them a draft storyboard structure built from their materials. Recommend to your expert which output format/s would best match their content. Use the first meeting to present the different possibilities for (video) outputs, i.e. a podcast series, documentary-style interview videos or live lectures. However, if there is flexibility, the final decision should be made by the expert, after all, she/he/they will stand in front of the camera. Also determine the approximate length of the video but leave some leeway in the run-time. Instead of setting a fixed number, i.e. 12 minutes, set a minimum and maximum.

Our draft storyboard was only a proposal. The expert decided how to order the content in the storyboard panels or to change the content covered. This process should be guided by what is necessary to include to achieve the video learning outcomes, not to replicate their presentation. An example storyboard is included as Appendix A. In our face-to-face meetings, our goal was to reach agreement on the following:

- The mode of delivery: a podcast, livestream or video? If needed, format modifications would be made to the pre-meeting preliminary storyboard based on expert input.
- A working video title: agree to a phrase that sums up the topic using keywords.
- Clear learning outcomes: list 3-5 learning outcomes to guide the video's content.
- A synopsis: summarize the video's content, different from the learning outcomes or the working title. An example synopsis would be: *'Using theory and case studies, Dr. Kristi Winters and Janek Bruker discuss harmonizing national survey measures with international standard classifications.'*
- Intended audience(s): Write down the intended audience for the video, i.e. the public, students, researchers, or grant applicants.
- Level (Intro or Advanced): Specify the audience level: a generalist or specialist.
- Identify further potential supporting materials: could additional content be sent to the director for later use?

If necessary, have follow-up meetings and/or get approval from other stakeholders to reach a final version. At the end of this process, everyone involved in the project should have a clear idea of what each phase of your video will communicate and how.

If you have a finalized storyboard and your expert is speaking extemporaneously (a live lecture or live webinar, an unscripted to-camera delivery, or an interview-style format) you can move to your next phase of video production. If your video needs information to be delivered in a controlled way, such as a how-to tutorial or an animated video constructed from a voice over, the next step is to write a script and script writing is the final topic we cover in this chapter.

2.7 Writing a script

If precise language is needed for your video to achieve its educational goals, a script is the best way to make sure everything is covered. Examples of this are software tutorial videos. It is possible for the trainer to record their desktop and speak extemporaneously while they interact with the software. The downside of this is that a lot of time can be wasted waiting for the software to respond, or the trainer makes a mistake and has to go back and do something differently. By writing out a script, you set yourself up to record high-quality audio, using language for strategic reasons, and control what is shown on-screen and for how long.

2.7.1 First-time tips for writing a script

Not sure where to start if you have to write a script? Keep in mind, you're writing a script for voice over work. At the end of the day, the most important thing is that your script has the words you need to record in the order needed to convey your ideas clearly. That's it. It is a low bar, so don't stress out. That said, if you need to share your script with others then you need to convey your ideas in a more organized way. Below we give you three tips to help you feel more confident about your script writing.

Tip one: your script doesn't have to look like the professional Hollywood scripts you'll see online. Formatting your script perfectly isn't important but communicating what you imagine alongside the text you wrote is important. Limit yourself to a single idea per paragraph and leave a line or two between paragraphs. This will help you and others identify what needs to be on-screen to communicate those ideas and leaves space for you to make notes. Some visuals are appropriate for multiple lines of text in your script, but you may need to add or change the visuals for each paragraph in your script to reinforce what the narrator is saying.

Tip two: write in the style of natural speaking, not for writing. Convey your ideas in a conversational tone and style, as if you're speaking to one person. Academics compose sentences that are great for journal articles, but that sound stiff and unnatural when read aloud. Aim to write with the same language you use to talk to people in everyday life. As an example, we're writing this handbook to sound more like a conversation than a software installation manual. To test how natural your writing sounds, read it aloud. Does it sound like the language you normally use? If not, tweak it to sound like a relaxed conversation.

Tip three: Swap out the passive voice for the active one. One way to make your video sound more natural-sounding is to use the active voice. English speakers tend to use the active voice in everyday conversation but the passive one is popular in academic writing. Compare these two sentences: "A great deal of meaning is conveyed by a few well-chosen words" (passive) versus "A few well-chosen words convey a great deal of meaning" (active). Another example would be "This software program was developed with the advice of data harmonization experts" (passive) versus "Data harmonization experts provided advice during the development of this software program" (active).

Unless you are working alone, you will need others to understand what the final product should look like. To do this successfully, you must link the text you've written to the visuals that will support and reinforce it. After you've written the text of the script, or if you are working with a script someone else wrote, divide up, label and number the script into the eight sections structuring educational video content. This will help you estimate how many storyboard panels you will need for each of the sections. Use whatever system makes the most sense to you to link the text in your script to panels in your storyboard.

Read the Burning Question text in your script. Estimate how many different scenes you want for that amount

of text. Go to your storyboard and count off the number of panels you need based on your script. Somewhere near the top of the page, write Burning Question. Now let's adapt the example given above.

You want the Burning Question text read out over an extreme close-up of someone's hands typing during the voice over. You also want a second scene that will be a screen recording of the software, in extreme close-up of some words being typed into a search bar. Label the text to be read out during the first scene as line 1a. Label the lines you want read out over the visual of words typed into the search bar as 1b. Switch to your storyboard Burning Question panels. In your storyboard panels, write 1a near the first panel and draw the image of hands typing on a keyboard. On the next panel, write 1b and draw a close-up of letters appearing in a search bar. By explicitly linking the lines in the script to the section they are in and the visuals that should appear during the voice over, you can hand off the post-production editing work and they should be able to create a first-version draft of what you envisioned by consulting these two documents. Alternatively, if you have to wait months between recording your voice over and having time to add the video elements, you won't have to recreate the work you did or even try to recall what you were thinking when you wrote the script. We provide an example of a script in Appendix B.

2.8 Next steps

After you have finished this chapter, you can get to work on creating your own educational content. To help you as you move forward, here are some next steps you can take:

- Write out a one or two sentence summary of your video's (or podcast's) topic. Bullet-point three to seven key learning outcomes that could be covered in five- to ten-minutes or if the content is too long for one video, break the content down into sections, and then for each list the three to seven key learning outcomes that could be covered in five- to ten-minutes, or
- if you aren't the content expert, schedule a meeting with your expert to have them identify three to seven key learning outcomes that could be covered in five- to ten-minutes, or explain chunking and work with them to restructure their content into a coherent series of chunks and then create three to seven key learning outcomes for each segment that could be covered in five- to ten-minutes, or
- if you are recording a live lecture or public talk, ask for and then use the speaker's notes. Create a storyboard plan for the post-production phases that will visually reinforce the content they will deliver.

2.9 Are you ready to move to the pre-production phase?

When you have a completed and approved storyboard, and script if needed, you are now ready to move into the pre-production phase. In pre-production, you will do all the work needed to make the recording day a success. We discuss those preparations at length in the next chapter. From this point forward, all your decisions will be based on, or at least guided by, the decisions you and your team made in the storyboarding and script writing process. To make sure you are ready for your pre-production work, here is a checklist of what you should complete before continuing:

- A shared understanding of learning outcomes for the video or podcast.
- An understanding of expectations with the video's 'expert' (if relevant).
- PowerPoint slides, images, or plan to screen-record for 'how-to' tutorials.
- A final storyboard, approved by stakeholders.
- If relevant, final script approved by the necessary stakeholders.

3. Proper Pre-Production Preparation Prevents Poor Performance

By Kristi Winters and Paula Schäfer



Image: "On set"¹⁹

When you imagine yourself recording a professional video, it's natural to think of a studio set, a scene flooded with bright lights, and you at the center of it all, calling "action". You might not picture yourself sat in your office for hours, writing emails and organizing file structures. However, thorough pre-production work is vital for your recording day to go smoothly. This chapter reviews the pre-production work you should complete to manage your video production properly from start to finish. We give specific and practical advice on planning your video recording, a plan for structuring your original and edited digital files, what to look for when you scout a recording location, tips you can give your expert for a great on-camera performance, and tips to make your first time directing an educational video easier.

By the end of this chapter you should understand:

- how to use your storyboard and script to identify, in advance, everything needed to record your video
- that video file sizes are often very large, and the necessity of a file storage strategy
- how our folder and file structures made post-production work easier
- how to determine your equipment needs, and what to look for when scouting locations
- media training tips you can give your experts
- our advice for first-time directors on how to get the best performance out of your experts.

¹⁹ by Avel Chuklanov <https://unsplash.com/photos/Hn3S90f6aak>.

3.1 Use your storyboard to plan your shots, storage needs, and equipment

In the last chapter, we indicated that your storyboard will be your roadmap as you progress through your educational video production. In this chapter, we build on that premise by showing you how to use your storyboard to plan your recording. During your storyboarding development, you planned the look for every scene. Now you will use these scenes to reverse-engineer what you need to achieve that look.²⁰ Let's walk through an in-person recording as an example. We will discuss the particulars of animated and screen-capture videos after.

Let's say that you've been tasked with recording a keynote address at a conference and the speaker sent you the slides she intends to use for her talk. You know what the conference room looks like, you know her slides will be projected onto a large screen, and you can sketch out where she will stand relative to the podium and the projection screen. With that information, you can plan for two camera set-ups: one with a medium shot of the speaker (showing her from about the elbows up) at the podium, and the second as the wide-shot to cut to if she moves around the stage (this is a better option than trying to track someone in motion). In addition, you have a third type of storyboard panel that is her PowerPoint slide as your full screen image. Those are your three basic storyboard panels: a wide shot, a medium shot, and still images that you will add in the post-production phase.

3.2 Your shooting schedule and your one-page shot schedule

You can use your storyboards to create two planning documents, each a cliff notes version of what you need to film. These notes are called a shooting schedule (see Appendix C) and a one-page shot schedule. In truth, because our videos were quite simple (one set, one person, one day of filming), on the days we recorded we made copies of our storyboards to serve as our shot schedule. However, to empower you to make more complicated videos, we review these two organizational assets so you can use them.

The shooting schedule is an abbreviated list of all the shots you need to complete the video. For example, your storyboard scenes have footage of your expert who introduces the topic, scenes of their public talk, and selected clips from both for social media promotion of the video. Create a shooting schedule if you will film different scenes in different locations over several days. In a spreadsheet, break down your storyboard scenes into a list of all the shots you need by day or location. When your list is done, find each storyboard panel in your shooting schedule. Each panel sketch in your storyboard should now correspond to a scene listed on your shooting schedule. This step makes sure you don't miss filming something you need.

A one-page shot list ensures you get the necessary footage on a given day, or at a given location. For each day or location, list the shots you need. For example, you're planning a sit-down interview with the expert, but you also want them to record some social media promotional footage. It's most efficient to record the footage for both while doing the on-set interview, so include the storyboard panels for the social media list on your one-page shot list. After your first one-page shot list is written up, go back and compare your overall shooting schedule with your location-specific shot schedule to make sure each scene is listed. On recording day, have at least two or three copies of the one-page shot schedule on set. The expert and the director should have their own copies as reference. As a first-time director, you probably won't be shooting scenes at multiple locations, but if you are, these documents can save you time and stress. With your one-page overview to hand, it's easy to track where you are in the recording process. You don't want to forget to record something on the day and create a new problem for yourself.

²⁰ Podcasters using an adapted storyboard or script can use the same approach to plan for audio files such as introductory or incidental music, or off-site and in-person interviews.

3.3 Pre-production tips for how-to tutorials and animated videos

A major benefit of how-to videos or animated videos is that you have greater control over the content. When filming a live talk, interview, or a to-camera video, you must rely on the performance of the expert to convey the information. You can only work with what they give you, and if you change your mind later, or find a problem or mistake, it might be impossible to re-record that section after filming has finished. In contrast, with tutorials or animated videos you can record several takes to get the wording or pacing just right and you can better control the final product. However, the downside to these videos is that you are now wholly responsible for constructing the visual content. You must plan out the visuals, in which order, well in advance. You must record the screen and decide whether a live recording is best or whether you should use a screenshot so you can zoom in on a button, for instance.

Your storyboard should indicate the images needed for each scene. If you are doing an animated video, you must find, name and perhaps number, as well as organize the images you need. If you use Creative Commons images to create your animation, you need to track the attribution information and include it to comply with the license's attribution requirements. We recommend creating a spreadsheet at the start and document the Title, Author, Source and License Type for every image that requires attribution. It is easier to search for and document attribution information simultaneously than to do the work in two phases.

If you use animation software, such as Doodly or Toonly, you may need to learn the software, then create and edit the images to fit your planned storyboards. That requires you to do more work compared with a live recording. You may need to plan for a preliminary voice over recording and then do a second recording later. This is especially true if you are creating a how-to video for software or a website interface.

In your storyboarding and script writing phase, you and the expert might think you have covered all the relevant steps, but be open to identifying additional information or changing information in your script and storyboard when you screen record the software. Adapt your storyboard and script as you go to get the best instructional video you can. If you end up filming more steps than you planned that's fine, it takes only a little time to add new how-to content and increase in the educational value of the video.

Now that you have an idea of how to use your storyboard at the start of your pre-production planning, the next section gives advice on organizing your files from the beginning to make your production phase and your post-production phase work go smoothly.

3.4 Find an appropriate storage facility and create a folder structure

Before you start a video or audio production, you'll need a suitable place to store your files. Organizing your folders and files into a planned digital structure will help you easily find your image files (e.g. .png, .jpg), text files (e.g. .pptx, docx, and .pdfs), and notes at every point in the production and post-production processes. Your choice of storage provider will depend on whether you are the only one who needs access to your footage, or others will as well. If you are working alone then local storage location is sufficient, but if you are working with people in a team, you need a common platform to store and share files. Platforms like Dropbox or Google Drive are some platforms that allow you to upload footage from your mobile phone to a shared workspace.

Storage capacity is an important consideration when choosing a storage location. Video files can take up a lot of space. High definition video files can quickly add up to dozens or even hundreds of gigabytes, therefore, a strategy for sufficient storage space must be part of your planning. If you don't have a place to store hundreds of gigabytes, a free option is to use YouTube as your storage location. Upload your raw files to YouTube and set the viewing permission to Unlisted. Making a video Unlisted means only people with the video link can watch it). YouTube makes it easy to download your videos later. See "Download videos you've uploaded with

YouTube Studio” for the step-by-step process.²¹ Having a paid file storage system is best, however, if you have no other way to store your files, it is worth considering and testing out as a free solution.

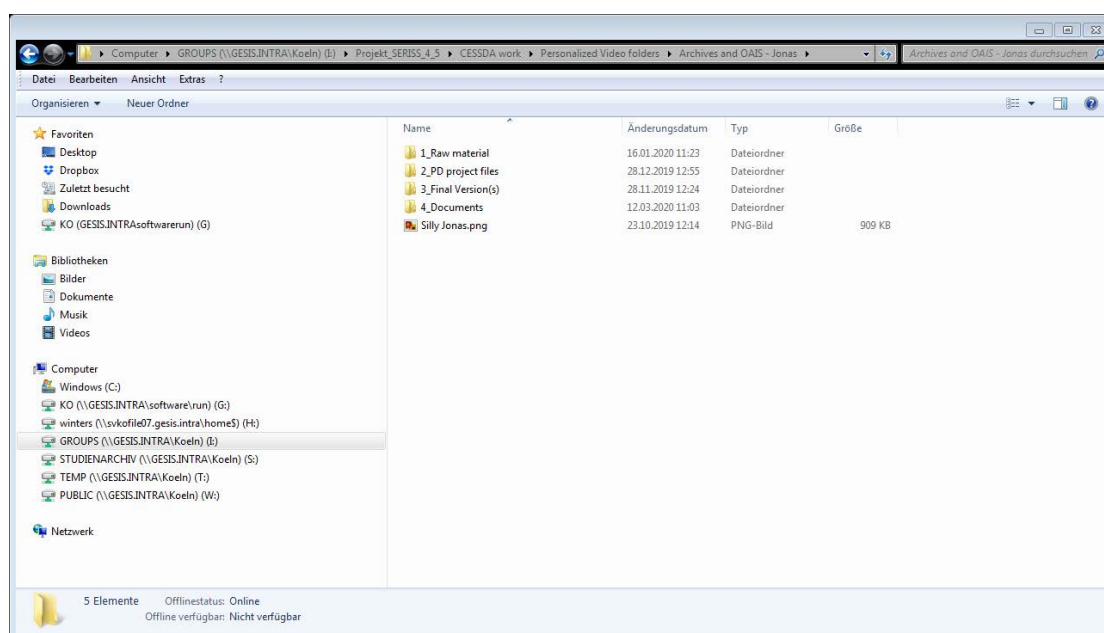
Always name and order your file and folder structures in a way that is as self-explanatory as possible: anyone who reads your folder should understand where to find which bits of content. Few people will ever record, edit and produce a video without a break; sometimes weeks will pass between collecting a speaker’s slides and inserting them as a picture in picture effects while editing. It’s worth developing a naming convention plan up front to ensure no one will struggle to recall where a specific document was located, or an image file was stored, or figure out which file is the most recent version.

The structure doesn’t need to be complicated, and it can be adjusted during the workflow. If you don’t know where to start, we recommend four higher-order folders with subfolders added as needed. We created a template higher-order folder structure to store materials that were relevant to all videos (easily copied across for new projects) and a Documents folder in which video-specific materials were organized so each video could be customized. We maintained a consistent subfolder structure across the individual video project to save time searching for things, and in post-production we always knew where to find every single file used in the video. This saved us a lot of time. Your folders and files structures should reflect your requirements, but if you are not sure how to structure your work, copy this system and adjust it according to your needs.

Figure 3.1 is structured by content type. All the original, unedited audio and video files were stored in **1_Raw materials**. This included the video from multiple cameras as well as our main and backup audio files, all appropriately named. We recorded our videos in 1080p as .mp4s, and our audio files were always recorded as or converted to and stored as .wav files. Cleaned versions of our audio files were stored here, because we treated the post-production audio as the original audio during our editing phase. We recommend preserving an original copy of all your recordings and working with a copy instead. That way you will always have a clean version to go back to if something goes wrong in the post-production process.

2_PD project files (see Figure 3.2) contained versions of the different phases of video post-production using our PowerDirector editing software. Preserving your project at different editing stages as you go saves you from the nightmare of an editing project that’s gone completely wrong. It’s much easier to close the project without saving after making a huge mistake, and re-open the last version you worked with, than it is to ditch an entire project and start all over again from the very beginning.

Figure 3.1. Folder structure to organize workflow



21 “Download videos you’ve uploaded with YouTube Studio” (2019) <https://www.youtube.com/watch?v=YcMdUjcg3eQ>.

Figure 3.2. 2_PD project files, the post-production editing versioning

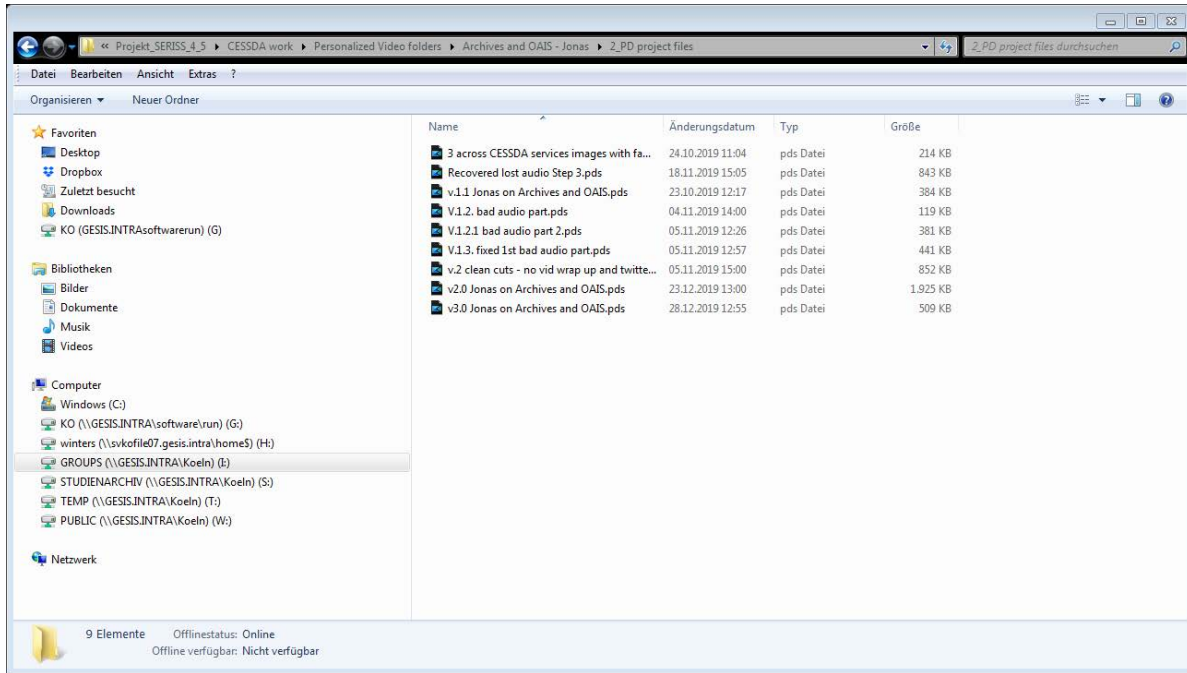
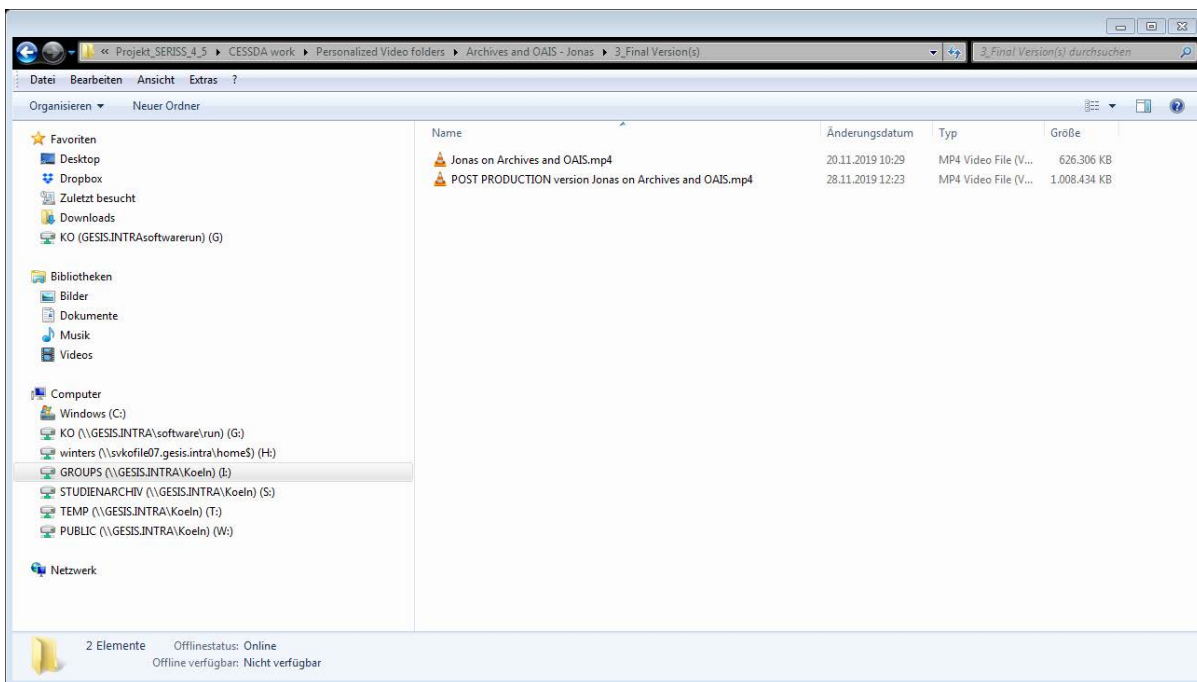


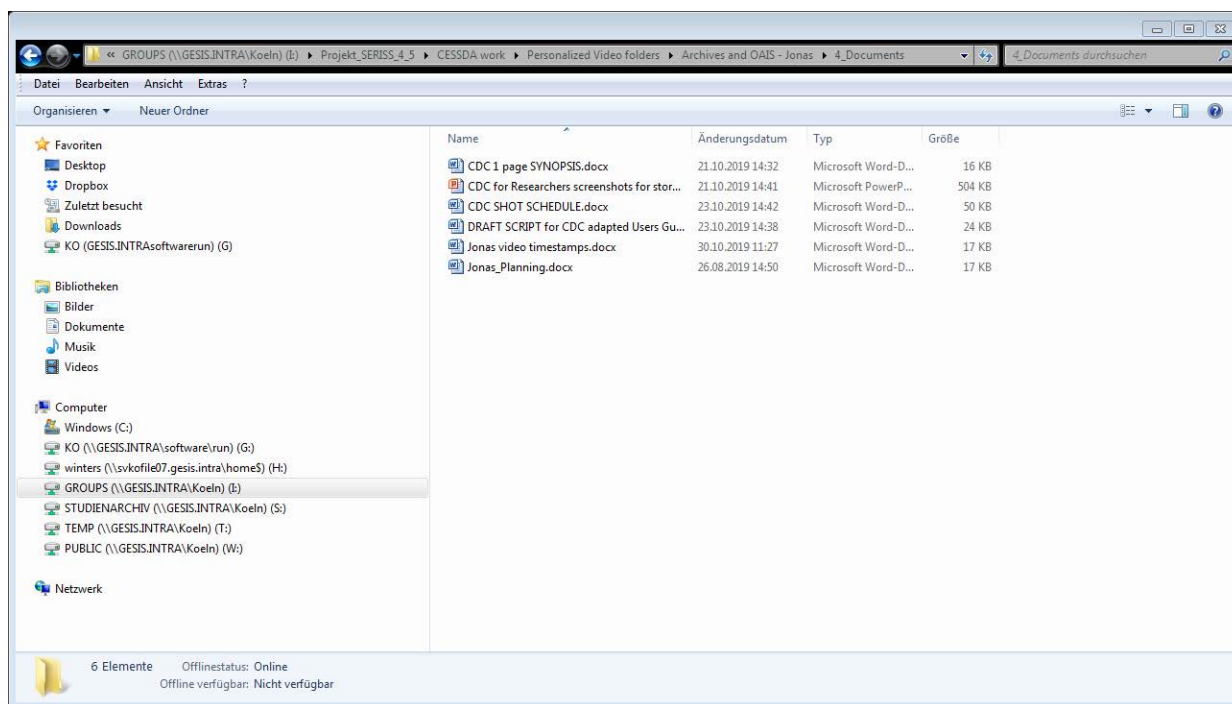
Figure 3.3. 3_Final version(s) of the .mp4 in its own folder



3_Final Version(s) folder contained the final, to-be-approved .mp4 version, before adding the branding (see Figure 3.3), in 1080p, with the 16:9 dimensions and as .mp4 files for YouTube. We also saved a version of the video to be published here as well. You can also save shorter, social media friendly versions or clips as 720p, 1x1 .mp4 files for Twitter, Facebook, Instagram and TikTok, for when you want to promote your video.

4_Documents is where we stored all other relevant documents (see Figure 3.4) This included files such as our expert's presentation slides, all images, scanned versions of our storyboards as .pdfs, versioned copies of the scripts (to track edits) as .docx, meeting notes and spreadsheets on location scouting or booking information. Create an excel spreadsheet where enter in all the relevant information for your video metadata and store it in this folder for later use.

Figure 3.4. 4_Documents folder content



3.5 In-person recording

3.5.1 Scouting recording locations, tips for lighting, sound and power needs

If you are doing live recording, you must find a suitable location to turn your vision into recorded video. Our first piece of advice is to think outside the box to achieve the look you need. You may envision a library background for your video, however, the nearest library to you is heavily trafficked and very noisy. Do you have a colleague with a lot of books on their shelves, but whose office is not on a main road and who will be out of their office in meetings next week? It's more efficient to create the illusion of a library setting with better control over your audio conditions than to spend a day doing multiple takes at the library due to loud background noise.

Perhaps you have no say in the matter because you've been asked to record a live lecture or a talk, and the location has been determined before your involvement. It is still important to scout the location in-person. Your concerns will be the same as for any location: what is the lighting in the room and how can you control it to your advantage, where will you need to place your camera for the best shots possible, what is the sound like in the room and how can you control it, where will you plug things in?

Whether you get to choose your location or not, use your time to brainstorm and add all the lighting, sound and power requirements your location requires to your equipment list. When you scout a location, take pictures of the space from multiple angles for later reference. You may want to bring a tripod and take pictures of the shot you want to record (e.g. a wide shot of the podium and backdrop) to check if there are things you want to include or exclude from the shot, before you start recording. We will now walk you through one practical choice you may have to make as the director: to film outside or inside. Each choice shapes your recording plans and work.

3.5.2 Recording outdoors

Let's say you choose the outdoors option. It may be less work if you can avoid having to do an advanced booking to reserve the space, and access to the wide outdoors provides flexibility for your video's background. However, there are things you must consider when planning your set construction and the shoot. First, you are now dependent on the weather: if your storyboard specifies it be a sunny day, an hour of rain or wind can throw off your recording schedule. Secondly, filming outside means making use of sunlight to light your scene. There is a definite advantage to recording in sunlight: it is free and requires no battery power or access to a power outlet. That said, you will need to think carefully as to where the sun is relative to your scene, how it will move across your set in the hours you record versus where you need the light to be for your shot. Also plan for the likelihood that the sunlight may suddenly change as a cloud passes overhead. If you cut between takes, swapping back and forth between sunny and overcast scenes, this may become a distraction for your viewers. The noise environment is another thing to consider when filming outside. If you're shooting on a busy street, use your scouting time to listen for predictable noises, such as a nearby church bell ringing every 15 minutes. You want to discover this on your initial scout, not after you've built your set. Your equipment and power sources will be battery-run when recording outside, unless you have a generator to hand. Plan this into your recording workflow to make sure you don't give instructions for everyone to arrive at your location but then the crew and expert sit around for an hour waiting for your mobile battery to charge.

3.5.3 Recording indoors

If you choose the "indoors" option, or if you are recording a live lecture or public address, you will have more control over light and noise, but you won't be able to make full use of natural light. That means you will need to construct/set up the lighting yourself. Make sure to note the natural and artificial lighting conditions when you scout a location and plan for ways to control the light in the room (for example, opening or closing the curtains). Ideally, your indoor locations should be noise-free, or at least allow you control over external noises. Filming indoors requires access to power outlets, make note of how many power outlets there are in the rooms you may film in and take their number and location into consideration when designing your set: e.g. you may need to bring extension cords along on the day because the power outlets are on the opposite side of the room from where you want to shoot. Note any tripping hazards you may create with your power needs and find a way to keep people safe.

3.6 Equipment checklists

Build your equipment list by consulting your storyboard sheets, your shooting schedule, your one-page shot list and the notes you made when scouting locations. We provide the equipment checklists we used as a reference for you, see Appendix E.

Example questions you should answer when you scout your location include, what is the room lighting like and how am I going to light it for my needs? Are there windows directly behind the speaker, or to the sides? At what time is the talk taking place, and how will that impact the lighting in the room? Will the conference organizers leave all the overhead lights on, or will they turn off lights so the audience can better see the projected slides? What impact will these lighting factors have on how your speaker is lit? Is there a chance your speaker will move to a position she is lit by the overhead projector light, half brightly and half darkly lit? Does it make sense to bring your own lighting to light the speaker on the day?

Next, think about your audio equipment. Please do not rely on the room's external speaker system to capture your audio! The sound may be so faint that you record the people sitting around you shift in their chairs better than you do the speaker. Even in the best-case scenario when relying on a room's sound system, you won't directly record the speakers sound. You will record the sound of sound waves bouncing all over the room,

you will capture every cough, every dropped pen, and people whispering around you. The solution is to mic up your expert and get a clean audio file you can add in later. Get a lavalier microphone, a dedicated mobile phone with an audio recording app, and convert them into a recording pack that your speaker can clip on and tuck into a back pocket, jacket pocket or leave on the podium itself. That means adding a microphone and another mobile phone (or some other recording unit if you have one) to your equipment list.

If you plan to record from two angles then you need access to two recording devices, such as two mobile phones and two tripods. What lighting equipment does the room already have and will you need to bring your own equipment to light your subject(s) properly? Will you mic your subject(s) or use a boom mic? What is your back-up audio strategy? Where will you put a mark on the floor or ground, so your expert knows where to stand for continuity between shots, or the boundaries of your camera angle (for public speakers)?

When you have answered these questions, sketch out a diagram of your planned set and include details such as (for indoor recording) the number of and locations of windows (as sources of light and noise), any overhead lights (which may or may not light your scene the way you want), and the location of power sockets around the room. For outdoor recordings note the position of the sun relative to where you will film, note what in the background could distract from the speaker (e.g. don't record where people walk their dogs because cute animals in the background will distract your audience), and note where noise interference can come from (e.g. where is the street traffic noise relative to your location). Share this sketch with the expert and any assistants before you start filming and keep the sketches with you on the day for reference. This ensures everyone understands the physical space you want to create and which equipment you will need to hand on the day.

3.6.1 Recording people

If you are recording a person, take the time to work out exactly where they will stand or sit during the recording. This may require you to bring someone with you to stand in for the expert so you can see how the existing light falls on their face. If there are shadows where you want to film, think about how to light their face for the camera. If they are giving a live talk to an audience, will they be behind a podium or not? Are there cords or leads or something in the background you want to avoid getting into the shot? If there isn't an obvious place for your speakers to stand, can you identify places you don't want them to stand, maybe because they will cross into the projector beam, or in front of a window where they will become backlit by daylight? To limit where your speaker stands so you can maintain some consistency within the frame or to avoid recording something in the background, buy duct tape and mark off areas on the floor. These will be invisible to the audience or viewer but will give guidance to the expert as to where they can and can't go. Make notes and plans to cope with these visual obstacles.

If the person speaking will be seated, make sure you don't give them a swivel chair to sit in. This eliminates the temptation to redirect their nervous energy into their feet in such a way that they are fidgeting and twisting the lower half of their bodies during filming. Also, test the chair you intend to use to make sure it is not too high or too low to fit into the backdrop you've set up or the background you've planned out. Discovering that sort of information on the day will either force you to rework your entire framing plan or take up valuable time trying to find and test out solutions to that problem.

The take-away point is this: the decisions you make during the pre-production process are the basis of a list with all the equipment you need the day you film. We reviewed the physical organization required for a successful production day recording. In the next section we give you advice on how to prepare people to be recorded.

3.7 Media training tips and/or how-to rehearse with your expert

In addition to your duties of developing the storyboard and script, identifying your equipment needs, creating a folder structure for your files and organizing the physical space for a recording, you also have to think about creating the right mental space for your expert within that recording space. This may be less of an issue if you are recording a live talk or an interview, but it may be an issue if your expert must speak to the camera. Our tips below are applicable to anyone who has little experience being filmed. Spend time with your expert to discuss the intersection between their performance and your recording to make filming go more smoothly. Even with recording a public speech, it is worth contacting the speaker to discuss how you are organizing the physical space around them, and what they can do to make their on-camera performance look its best.

3.7.1 Booking rehearsal time

Determine if you can find a useful time for rehearsal during pre-production. We aren't recommending you set aside a dedicated day and time to do a full rehearsal. The experts we filmed were very comfortable speaking in public on their topics. Instead of booking a separate rehearsal time, we asked them to arrive on set an hour earlier to: 1) sit, or stand on the floor mark we'd made, so we could light them while they practiced delivering their lines to the camera, and 2) be wired for audio, for the boom operator to test out their boom placement, and so the crew could touch up the expert's hair and make-up before recording. We found this to be an efficient way for the team to multi-task.

However, you don't have to think of rehearsal as an in-person, on-location event. There are ways you can communicate your vision with the expert, and how they fit into that vision, that don't require the expert to be there in person. Here are two examples:

- ➔ If recording an address by an expert who arrives on the day of the event, your media training may take place over email. It can include links to TED or other public talks to help them understand what you want the final video to look like. You may meet an hour before their address to discuss where they should or shouldn't stand to stay out of the overhead projector beam, or to test out wiring the lavalier mic to their clothing and a pocket for the mobile phone its attached to.
- ➔ Rehearsal for your voiceover expert may include sending them the script early so they can rehearse pacing their delivery before recording day. Rehearsal for a live webinar presentation will take the form of a webinar-hosted rehearsal. Give feedback on their mic quality or placement, or on the amount of background noise in their recording environment.

3.7.2 Be the director from the start

As a director of non-acting professionals, you must play the role of a media training coach and an emotional support for experts who are nervous about being on camera. An effective way to get a better performance is to give your experts specific things they can do to look and sound better on camera. We recommend that after a storyboard and script are decided, the next task you assign your expert is to work on their on-camera skills. These skills are not identical to giving a live talk or delivering a lecture. Help your expert by advising them well before the recording date, explaining how to rehearse and modify their delivery from one before a live audience to one more suited to being filmed.

3.7.3 Set expectations

As a director of educational videos, your aim is not to evoke an emotional, tour de force performance from your experts. Your aim is for your expert to deliver their knowledge in a natural and engaging style. Everyone has their own personality, energy, or way of being when they are comfortable and relaxed with friends. We

considered it a success if the person we saw through the camera lens was the same person we knew in real life, not a stilted or robotic version of them. How can you help your experts give a natural performance?

We learned it helps to give experts a few video examples to help them understand what we were trying to achieve. If the talk is a live lecture, you can show your expert a few TED Talk videos that showcase the elements you want to see in their performance: e.g. a slower delivery than normal speech, not turning their back to the audience to speak to the PowerPoint slides directly, being deliberate about where they stand, and moving in their space in ways to not block the slides or end up partly stood in the overhead projector light. If the expert is delivering a to-camera talk, show them a video with a presenter who looks relaxed in their stance, and is using their hands when they speak to give a natural look and feel to their delivery.

3.7.4 Tips on starting and ending a scene

You will need to teach your expert how to stay still and simply look into the camera at the start or the end of each take. During the editing process you will need 3 to 5 seconds with your expert looking into the camera (or at the interviewer) before and after dialogue is delivered to start and finish a scene. You want these precious seconds to help give you extra frames between video clips to insert a transition, or the space to edit other things into the scene, or you may need those seconds to fade from black or fade to black. Getting your expert to give you these few seconds of silent staring, with positive energy, into the camera is likely something they've never been asked to do before. Holding a pause at the start of a scene is easy, that should require less prompting on your part. However, the feeling of ending your final sentence and then staring silently into the camera (or at the interviewer) as you hold your expression for up to five seconds is not at all natural and requires rehearsal.

It is common for people to deliver their last line and then instinctively, in relief at having finished the scene successfully, “drop” their professional demeanor. This could mean looking away from the camera entirely, relaxing their stance to more of a slouch, laughing at some mistake they made or shifting from their current expression to a dead-pan facial expression. You need to encourage them to not give in to this impulse! It looks terrible on camera and you might not be able to salvage the last line of the performance without a harsh cut that looks awful in the final version. This advice on holding their expression also applies to video interviews or documentary-style videos; however, in these cases their eyes will stay on the person interviewing them. We recommend two things to make sure you get those few extra seconds from your expert that you need for your post-production edits.

1. **Show your expert what you mean.** Once your expert sees what they need to do, doing it will be easier for them to mimic it. Find and share footage of people reporting the news live on location. Ask them to notice professionals as they wait to be called on: they look into the camera attentively and engaged, and when they finish (usually after they say something like, ‘Back to you, Sue and Dan’) they hold the same energy and facial expression they used to close their last lines until the camera cuts away. Your experts need to do the same when delivering their lines for you. If you are recording a live talk, coach your expert to speak slowly and also to add a short pause after they introduce a new slide, or if they quote from a slide, to allow you a few seconds to fade from the slide back to a shot of them speaking in your video.
2. **Practice and reinforce by saying “action” and “cut” to help your expert.** On a small shoot, it is not necessary to call out action and cut; however, you may find it useful because it cues your expert as to when they are being filmed or not. Explain to your expert how to keep their focus and energy as they remain looking into the camera after delivering their last line (or the last line they can remember) and hold it until you yell “cut”. Since your expert may think one second is enough when you need 5 seconds of silence, using “cut” should keep them in place for as long as you need.
3. **A final tip.** Use this technique to salvage otherwise lost takes. This will happen: you’re filming your expert and they get halfway through their scene but suddenly forget what line comes next. Their body language shifts, their facial expression changes and they look off camera to announce they’ve forgotten what to

say. Oftentimes, what they delivered up until they made a mistake was great and usable, but given how they reacted to their error you can't use any of the scene because there was no room to edit around their reaction. Plan for these types of errors with your expert and explain how they can use the "pause and stare" technique to salvage a bad take. Our advice to experts was, "if you forget where you're going or what comes next, just say your last sentence with confidence and look into the camera for a few seconds." This is a skill people must acquire, but once they get it down it will give you a lot more options to salvage an otherwise lost take and reduce the number of takes needed to complete a scene.

3.7.5 Tips for body movement

Many people get nervous when they perform before an audience or on camera, and oftentimes nervous energy unconsciously expresses itself in physical movements. As the director, your job is to help your expert find solutions to common body movement mistakes people make when they first go on camera. For instance, in a live talk, a common way standing people redirect their nervous energy is to sway from side to side, or to shift their weight from one foot to the other. You can help nervous experts by using tape to mark where their feet should go (where we get the phrase "hitting your mark"). If they continue to sway from side to side, you can instruct them to stand with one foot slightly in front of the other. Someone swaying back and forth towards and away from the camera is less noticeable than someone swaying side to side within the frame, and if you can't stop someone from swaying at least you can make it less noticeable.

If your expert is seated for an interview, they may keep a nice posture but direct their nervous energy into their feet and legs by swiveling back and forth in their chair, so the lower half of their body is constantly in motion. This looks terrible on camera and is very distracting to the viewer. You can solve this problem by swapping out a swivel chair for one that doesn't.

A great way to redirect people's unconscious nervous energy is to encourage them to talk with their hands as much as they want. People talk with their hands all the time in their real lives. If you want to guarantee a wooden on-camera performance from anyone, ask them to talk without using their hands. Immediately their body will become more tense and part of their brain will be distracted with not moving their hands instead of being 100 percent focused on explaining their expertise. Since we want to avoid wooden performances, encourage your expert to use their hands as they would in natural conversation.

You might be wondering, "What do I do if someone is using their hands in a way that is completely distracting?" In truth, we have yet to come across anyone who did this in our shoots. Everyone used their hands quite naturally. However, the solution to distracting hands in the shot would be solved during the editing process. Eliminate distracting hand movements in post-production: you can tactically crop a wide-angle shot into a medium shot (e.g. from the elbows up) so the hand movements are not visible, if they are distracting, but the delivery is still natural.

As a first-time director, you should record your primary footage (your head-on shot if you are using two cameras to film the same scene) as a wide-angle shot to capture the expert's body language and hand movement, especially when they reinforce what is being said. For instance, if your expert is describing the process of putting a new questionnaire into the field and they move their hands from left to right as they describe it "going from the office out into the field" you may want to keep that in. That said, the real reason for encouraging your expert to use their hands as they speak is to encourage a natural delivery, whether their hands end up in the frame or not.

3.7.6 Tips on facial expressions and body positioning

You can help your expert look better on camera by giving them a few simple tips. The first is to encourage them to keep a slight smile on their face. This will make them come across as warmer and friendlier on camera than a dead-pan expression would. By this we don't mean the large, showy, full-on teeth type of smile, just a

subtle, closed mouth smile with the positive energy of someone who is genuinely happy to be discussing their topic. The next tip is to have them lean their body forward ever so slightly towards the camera, not more than 10 or 15 degrees, and hold their heads slightly forward too. What you're looking for here is the body position and energy of someone leaning forward because they are excited to discuss their topic. This body positioning is more important with seated subjects than standing ones because leaning forward while seated (as opposed to relaxing back) will make the stomach and any double chins less prominent, but it is useful for standing deliveries as well. When directing someone giving a live lecture, the body positioning is less important (either because your speaker will be behind a podium or moving around the space as they deliver their talk), but the slight smile and warm energy are always good advice for performers.

3.7.7 Tips on eye movement

A characteristic of a professional looking on-camera performance is having a confident gaze. This is most important when speaking directly to the camera, however it also holds for interview-style and live lecture videos. What you want to avoid, as the director, is for your expert's eyes to dart around nervously while they are speaking. The best way to help your expert hold a confident gaze is to help them know where to look so they look great on camera. Explain the problem you're trying to avoid and assign them a place to look while you film so they don't have to find one for themselves. If you lit your expert using bright lights, it may be hard for them to find your camera lens through that intense brightness. For our to-camera videos, we used a brightly colored post-it note under the camera lens to help them find exactly where to look. For our documentary style videos, we sat someone across the table and had our expert explain to them the content we were filming: having a real person to look at made it easier for experts to keep their gaze steady while they spoke.

For live lectures, there is a tendency for some speakers to look away from the audience and read something off a PowerPoint slide behind them. As the director, this is terrible for you for two reasons. First, when people turn their backs to speak to the slide, not the audience, you end up filming the backs of their heads, which is not as interesting for the viewers. The second problem is how it might impact your audio recording of their talk. Ideally your expert will be wearing a lavalier mic. Your worst-case scenario is that you have put your main audio recording microphone on their podium, which they then wander away from, they then turn their back on the audience to speak to their slides, and you lose their audio almost entirely. The best solution is to explain this problem to the expert and discuss how they should move around when they speak, and to keep eye contact with the audience. You can then build your camera angle and shot to accommodate their style. Having this discussion in advance will make them more conscious of where they look and stand on stage while giving their talk.

3.7.8 Tips for verbal pauses

"Um", "uh" and other verbal pauses are things we all use in speech, often as we search for the right words to say. They are to be avoided in professional speaking situations whenever possible because they can become annoying when done repetitively. Avoiding verbal pauses is easy to do when you are recording from a pre-written script. Verbal pauses are more likely to come up when your expert is speaking extemporaneously on their topic. People unconsciously fill the silence between sentences with a vocalized pause because they feel the silence is uncomfortable. Help your experts become aware of when and how they are using verbal pauses (people often don't realize when they are vocalizing a pause) and provide them with tactics and solutions to avoid them. When helping an expert with their verbal pauses, we provide you with a few options for solving the problem. Keep in mind that the goal is not to eliminate all verbal pauses – that would be asking a lot of your experts – but to significantly reduce them.

Tactic 1 Fix it in post. You can try to remove verbal pauses in the post-production editing phase of the project; however this adds a lot of work to your post-production duties. This is a fine solution if your expert only

infrequently says “um” or “uh”, or tends to vocalize a verbal pause when moving from point to point; however, if they frequently use them, or use verbal pauses in the middle of sentences, it will be too much work for you to do. It’s better to try to get your expert to fix their verbal pause habits before you record them than to fix them after.

Tactic 2 Embrace the silence. In rehearsal with your expert, practice replacing their favorite verbal pause with silence. Powerful speakers understand the power of silence. After a bold declaration, silence can be used as emphasis and space that lets the audience consider what has just been said. Silence can be used as a pause between different points, indicating a change in topic, and it can be used instead of a verbal pause to make the speech delivery more pleasant for the audience. Working with your expert to practice replacing their verbal pauses with silence will make them more aware of their verbal pauses, and even a reduction of verbal pauses by twenty-five or fifty percent will improve the final product.

Tactic 3 Visualize the reminder. Another tactic you can use to prevent verbal pauses is to create post-it notes with the word “uh”, “um”, or “so” along with the international interdiction sign. Leave the post-it notes on the podium, or somewhere on the computer screen, for a live lecture. For to-camera or interview style documentaries, you can make them as large as an A4 paper and tape them under the camera. In this case the “No ums” and “No uhs” signs work on a subliminal level. The speaker won’t necessarily look at the post-it notes directly but they will be in their line of vision. We were skeptical about the efficacy of this method, but when practiced it produced good results.

Giving your expert tips on how to stand, where to look, and how to deliver their lines more effectively will help them look their best on camera and (hopefully) reduce anxieties your experts might have about appearing on camera. When you take on the role of video editor, the time spent reviewing and rehearsing these techniques with your expert should give you a performance requiring less post-production work.

3.7.9 Tips on clothing, hair, and make-up

When recording educational videos, an expert dressed in business-casual is common, since it is a good balance between looking professional and looking approachable. Those who give live talks may want to wear more formal wear, and that is also common to such videos. As the director, you should communicate three pieces of wardrobe information with your expert. The first is to tell them to avoid clothing with small patterns. Solid colors and large print patterns are easier for the camera to pick up. Small checks, especially, create a ‘strobe’ effect that is highly distracting. Avoid clothing that will strobe on camera. Discuss this during the pre-production meeting, and on the day be sure your expert isn’t wearing something with problematic patterns. Clothing with noticeable brand logos or large lettering can be distracting or look inappropriate in an educational video. The second piece of wardrobe advice is to make sure that if you are constructing a colored background to film them against, communicate which color it is to your experts and ask them to make sure they wear a color that is different from your background color so they don’t disappear into it. Third, make sure something they wear has pockets they can discreetly slide the mobile device attached to their lavalier mic into.

Have hairspray, a comb, and powdered make-up in the skin tone of your speaker. It takes very little time to run out and get travel-sized hair spray, a new comb, and a powder make-up pallet in a range of colors. You should add these to your equipment list and have them on hand the day of recording. You don’t want to have your expert get under the lighting you’ve set up, and then have a bright white reflection at their hairline with no means to powder it down and remove it, or notice your expert has a few stubborn hairs that keep popping up and you have no way to comb it down and spray them in place.

We’ve spent a lot of time giving you advice that you can pass on to your expert to make sure they are a success. Now we’ll provide tips for you, the director, to make sure you feel like a success the first time you are in charge.

3.9 Tips for the director: preparing to record

Whether you're organizing a podcast or directing a video interview, stepping into the role of director requires you to not only master technical skills (e.g. setting up a wide-angle shot or adding a fade in effect to your video in post-production), but also to master the interpersonal skills of being a counselor and a coach to your expert. In this section we give you tips on how to get the best performance out of the people at the center of your production. We focus on 'on camera' recordings but the advice is relevant when recording anyone.

An analogy for directing other people in educational videos is to see yourself as a gardener: your job is putting together the right conditions (a good script, the proper filming conditions) and the kernel of knowledge (the expert) with the goal of bringing out the best by combining both. During the script's development and again during the media training session, we found it effective to reassure the expert that our job was to make them look good, especially if the expert had no experience of being filmed and/or was not comfortable being recorded. From experience, we know that unless they are used to being filmed, people will not like how they look or sound on camera, even when they look and sound great to everyone else. Being sensitive to people's discomfort and consciously working to make them feel relaxed by giving them positive feedback and making it an enjoyable experience is important for getting a great performance out of them. We helped set our experts up for success by explaining our goal was for them to give a relaxed and natural performance, and it was our job to make sure they looked professional on camera. To make sure they look relaxed and confident, we worked to bring out their personality on camera as well as their expertise.

A list of first-time director tips could be endless, but these are the top five things we found most important for our success, and enjoyment, while directing experts. They are transferable to other output modes, such as interviews and documentary-style videos. Here are our tips for first-time videographers directing subject specialists with no acting experience:

3.9.1 Tip 1: Embrace extemporaneous takes

The good thing about scripts is that the wording is very precise; this is great when you read them aloud for an audio-only recording. The bad thing about them is that delivering memorized lines perfectly is very difficult for non-actors. Your expert is an expert in their subject area, not in acting. They don't need to memorize a pre-prepared script line by line; and if they try, your experts will mess up and forget their lines, count on it. Failure to deliver their lines perfectly will be a psychological drain on them: they can become harsh on themselves (they want to be perfect on camera, after all), become frustrated, and messing up several takes in a row will be demoralizing. Their positive energy and confidence will drop and it is on you as a director to prevent this by instructing people on how to do their takes and their retakes when they, inevitably, stumble over or forget a word. You must counter their instinctive reaction to their mistakes. Their instinct will be to start from the beginning of the scene each time they mess up, even if the section they messed up was near the end. This is a huge time-suck that you want to avoid at all costs.

Unless you have a good reason to stick to the exact wording of a script, you should have used your pre-production storyboard and script writing sessions with your expert to outline what information needs to be covered within each scene, not which words need to be spoken. Our experts routinely spoke extemporaneously on their topic in front of conference audiences. We wanted to draw on that comfort zone as much as possible during our video shoots. Throwing away the script can help do that. Let your expert draw on their experience explaining their subject, broken up into the scenes of your storyboard, rather than asking them to memorize lines. Structuring the video content and shoots to draw upon what our experts felt comfortable doing cut down on rehearsal time and the number of takes we did for each scene. It reduced the stress for everyone, and importantly, our experts told us they had a positive recording experience and liked the results.

Finally, be explicit with your expert that what you want is a natural delivery, and in natural speech sometimes people stumble over a word and that is fine. Tell them to power through the scene, just as they would do in

front of an audience. In some cases, the stumble will not matter to the overall scene and can be left in, or deftly edited out, or a pick-up scene can be recorded, taken from just before the stumble and fixed later in post-production. Getting people to continue their lines after a slight verbal stumble will save you enormous amounts of time, takes, and permission to be fallible will save your experts a lot of frustration.

3.9.2 Tip 2: If relevant, plan for multiple takes

Set expectations early on with your expert that each scene will probably need multiple takes. Our experience shows that people rarely do their best take on the first take. We often ended up using their third take in our videos. During the first take, people are getting used to speaking to the camera, in the second they find better ways of delivering the information, and by the third take they are both comfortable with and efficient in their deliveries. Knowing that you will want them to do a scene a few times reduces the pressure on your experts to be perfect, and it also opens up a space for them (or you) to ask for another go, and improvise, or offer alternative ways to deliver their lines. The benefits of setting up multiple takes as an expectation for you, as the director, are that 1) if your expert does an awful take you can identify the problem and address it in the next take without making a big deal out of it, and 2) having multiple takes to choose from gives you flexibility in the post-production editing process.

That said, you are not required to record multiple takes of a scene if you feel you got what you needed on the first try. A 'good take' is not easy to define, it is sort of a "you know it when you see it" experience. However, if you can't think of what the expert could do to improve on their delivery, then it's a good take. Move on. We found that as our experts got into the groove of speaking on their topic, their comfort level reduced the need for multiple takes. When our expert got a scene right the first time, we would note it and congratulate them for a great performance (here you should specify what you liked so they can continue doing it) and encourage them to move to the next scene. Also consider re-shooting the first scenes you filmed a second time again after you recorded your last scene. Your expert will have a different energy after two hours experience delivering their content than in the first two minutes. You may get a better opening performance at the end of the shoot than at the start.

3.9.3 Tip 3: Active listening makes your retakes more efficient

This will happen: your expert will get seventy-five percent of the way through their take or answer to an interview question and then make a mistake. Their instinct will be to start over from the beginning. Your instinct as a director should be to preserve the first seventy-five percent and retake the scene only from where your expert stumbled. How will you know where to pick up that scene without a script? By maintaining active listening while you are directing.

Active listening allows you to catch a verbal stumble and sets you up to help your expert to do another take based on the exact words they just used. If you are listening to every word during a scene you can mentally note the words said just before an error. Then you can say to your expert, "Pick it up from" (then quote them): "These data are all publicly available from...." and record only that part of the scene you need.

This is not easy. It's like patting your head and rubbing your stomach, all while hopping on one foot. As the director, when the Record button is hit you will be monitoring the shot composition, the scene lighting, background noise and watching the boom mic location to make sure it doesn't drift into the shot, all while listening to your expert deliver their lines. This is mentally taxing. That said, keep practicing it. It will save you a significant amount of time and make your post-production editing process smoother.

3.9.4 Tip 4: Shoot for the edit

As the director, you must always keep the final look you want to achieve in mind while you are recording. This means you have to position your camera(s) and shots to give you either the exact look you want or to give you options to edit it and make it look the way you want by cropping or editing it in post. Flexibility in your footage gives you multiple editing options, and that is never a bad strategy for a first-time director. Practically that means filming wide-angle shots in high definition.

Shooting in high definition (1080p) allows you to zoom in on a scene while maintaining the clarity of the scene, and shooting in a wide-angle allows you to push the speaker to one side or the other while adding in a graphic as a picture in picture above their shoulder during the editing phase. It will also allow you to resize a 16:9 scene to repurpose it as a 1:1 promotional video with more flexibility. Use your social media storyboards alongside your video storyboards to make sure you are getting the footage you need for different uses of the video.

3.9.5 Tip 5: Keep a positive energy

Your expert (and film crew) will look to you to get a sense of how the video shoot is going. It is up to you to keep it a positive experience for them no matter how it is going. Remember that your experts are most likely out of their comfort zone, feeling slightly vulnerable and might be dreading seeing and hearing themselves on video. Giving praise and positive feedback on specific things about their performance, in rehearsal and/or on the day, will keep them motivated, relaxed in their stance and delivery, and they will look back on the recording as a fun and positive experience. Be their reassurance, their constructive critic, and their cheerleader. They will be grateful to you for the guidance and encouragement, and you will get a better and more natural performance.

The lead author's tactic to counter on-camera anxiety was to maximize their comfort levels during filming by giving positive and specific feedback on their performance, e.g., "I really liked how you phrased that last section," or "The pace of your delivery was really good during that scene, I like the short pauses you added to let the information sink in," or "How you held your gaze into the camera after the last line was perfect!" By giving specific feedback on what they did well, I hoped that they would recall and focus on the things I praised in their performance (such as those well-timed pauses) when they watched themselves back, more so than focusing on how they don't like how they look or the sound of their voice.

3.10 What have you learned?

In this chapter you learned that there is a significant amount of preparation that is required of a director. That includes working out a plan for what you need when you film; creating an organizational plan for your video and audio files at various stages of production; identifying your recording needs when scouting locations; having tips and advice you can give your expert to help them prepare for and feel more confident about performing on camera; and tactics for getting a great performance out of your expert. The next two chapters deal with the specifics of the production phase, such as recording the audio and visuals you need for the post-production work that will turn your vision into a reality.

To confirm you understood the main points of this chapter and to reinforce your understanding, try to answer each of these points.

- Review your storyboard and/or script to pre-identify what you need to create your content.
- Where could you securely store 50 GB of video files?
- Sketch out a folder and file structure based on your planned project.
- Name three things you will look for when scouting locations.
- If your expert uses a lot of verbal pauses, list a technique you could use to reduce them.
- If your expert seems nervous about being on camera, list two things you can try doing to help them relax.
- Do you have a spreadsheet or other system to keep track of Creative Commons music or other images you will use?

4. Audio: Studio and Live Audio Recording

By Kristi Winters and Paula Schäfer



Image: "Untitled"²²

High quality audio is the most important component of successful educational content. Whereas film directors are told to ‘show it, not tell it’, our goal as directors of educational content is to show it and tell it – and the ‘tell it’ part requires quality audio. Good audio quality is necessary if you want people to repurpose your video content into a podcast and listen to your webinar or video while commuting or walking the dog. In this chapter, we provide you with technical advice for recording formats, tips on recording equipment, and advice on controlling the physical environment where you record to get the high-quality audio you need to bring your creative vision to life.

By the end of this chapter, you will know:

- in which format to record and export your audio files
- how to organize your audio files
- three common audio challenges you’ll face in the studio or in a live setting
- options to manage your audio challenges
- several online resources on audio recording
- tips to get the best performance out of your experts.

²² by Soundtrap: <https://unsplash.com/photos/B2fNIHHI7dl>.

4.1 General advice for recording audio

Recording the highest quality audio possible should be your top priority when creating educational outputs. This might not seem logical, given all the time and attention spent on a video's images, but audio is a too-often overlooked element for first-time video creators. It is your audio – not the visuals – that will make a video unwatchable. When you have quality audio, you can always fix the visuals of the video. However, if your content has terrible audio, nothing in the world will induce someone to suffer through a 60-minute inaudible public talk recorded from an echo-filled lecture hall's sound system.

We define good audio as when listeners don't notice anything other than the content being delivered. Bad audio draws attention to itself because listeners cannot hear the speaker, or there is noise interference (e.g. echoes in the room, the audience talking, or distortions caused by improperly using a microphone). Further, high-quality audio is easily converted into text by YouTube's auto-generated, multi-lingual (original spoken language) closed captioning feature. This widens your content's reach to people with hearing disabilities and non-native speakers who use the subtitles to check their understanding.

4.1.1 Recommended formats for audio recordings

Whether you record directly onto your desktop computer from a USB microphone or you use a lavalier microphone attached to a voice recorder app on a mobile phone, we recommend working with two audio formats: .wav and .mp3. Record and edit in .wav, export your audio file in .mp3. Why do we recommend you record and edit in .wav and then create a lower quality .mp3 output for your final product? We think you should work with the highest quality recording possible, but after your post-production work, the final audio file can be stored in a smaller file format. If you record your audio in a format other than .wav or .mp3 into your computer or on your phone, there are websites and editing software that allow you to convert file types. However, you can't turn a compressed .mp3 recording into a higher quality uncompressed file by converting it to a .wav format, so if you choose to record in .mp3 you can go ahead and edit the file in .mp3 as well.

4.1.2 Record and edit in .wav

A .wav audio format is an uncompressed audio format. That means that it is, as much as is possible, a perfect representation of the audio recorded. The downside to such fidelity is it results in larger file sizes than other audio formats. That said, when you have the option to record in .wav quality, we recommend you record in and edit in the highest quality format possible.

4.1.3 Export your .wav file as an .mp3

After editing your audio file in the .wav format, we recommend exporting the edited audio file in .mp3 format to save on storage space. In contrast to .wav, .mp3 produces an inexact approximation of the audio, meaning some data may be discarded. However, voice-only audio files don't require the same audio precision as does a John Williams symphony. An .mp3 will do the job. For podcasters, a big upside to .mp3s is that the file sizes are smaller than .wav files. If your podcast host site charges you by how much storage space you use, exporting your podcasts as .mp3s reduces the storage space needed.

4.1.4 Organize your audio files

For a detailed strategy for organizing your audio-visual files, folders and storage options, refer to the section called "Find an appropriate storage facility and create a folder structure", in chapter three. Here is the TL;DR (too long, didn't read) version if you're in a hurry: For a smoother post-production workflow, give your audio

recordings versioned names for different stages of post-production that make intuitive sense. A standardized naming protocol will make it easier to find your files (e.g., v1.0 for the raw files and v4.0 for the to-be-published files). A naming convention, applied consistently across your files and folders, will save you time in post-production and publishing. For content that is part of a series, such as podcasts, consider adding the recording date, and/or episode number, and/or guest last name and first name, or by topic, to your versioning information.

4.1.5 Optimize your sound quality

If you don't develop an audio strategy for your recording location, you're setting yourself up for a nightmare of a post-production clean-up job. The more audio effects that you have to add to an audio file to fix it, the more you degrade the overall quality. Work smarter, not harder. Get great original audio and save yourself hours of work in post-production by having the right equipment for the job and by optimizing your recording equipment and space. We focus next on three factors that can impact your audio quality:

- background sounds, e.g., any unwanted noises picked up on your recording
- room tone, the way the recording room shapes the sounds being recorded
- plosives, puffs of air that vibrate the recording equipment and cause audio distortions.

Preventing audio problems is more efficient than correcting them. To avoid unnecessary post-production work, first assess your recording equipment choices and your recording location's acoustics. With that information you can decide which microphone(s) to use and determine a strategy to deal with these common problems.

4.1.6 Reduce background noise

If you have the freedom to choose where you record, take advantage of this and select the quietest location possible. Microphones don't distinguish between the sound waves coming from a human voice and those coming from the traffic outside or bird songs. It is easier to book a quieter location, away from street noises or colleagues conversing, than to try to remove noises in post-production. Also, scout your potential recording locations at different times of day: perhaps there is a time slot between 2 and 4 pm – after the lunch rush, but before people start their commutes home – when the room is at its quietest. Be sure to securely close all the windows to reduce background noises. Putting up a Do Not Disturb or a Live Recording In-Session sign on your door while recording will prevent interruptions.

4.1.7 Control room tone

Room tone refers to the unique sound acoustics of any room. Consciously or not, you can recognize an audio recording that was made in a large, empty room. The voice sounds distant and there is probably a slight echo when they speak. Regardless of where you record audio, you want to avoid sounding as if you've recorded in an empty lecture hall. Your aim should be to create an experience that is akin to speaking with a friend.

A room's room tone depends on the types of materials in the room (concrete reflects more sound than carpeted floors), and the furniture within it (kitchen counters will reflect more sound than a sofa). To create the effect of recording in a professional studio, manipulate your recording area to control the room tone. Use sound-absorbing fabrics to transform your recording space from one that echoes into a quiet, intimate audio environment.

Starting with recording in an office or similar, if you'll do several hours of recording in the same space, invest in some sound-absorbing foam (or hang sound absorbing blankets, if you have the budget) and set it up behind and around your USB microphone. Surrounding your mics with sound-absorbing foam or fabrics will stop sound waves bouncing around the room and create that warm, rich, intimate sound you're aiming for.

If you can't invest in sound-absorbing foam, create a makeshift recording studio by stacking pillows up behind and to the sides of microphone to create an all-fabric, sound-wave-absorbing sound booth.²³ Those who record from home often record from inside a closet filled with clothes. Use whatever creative means you want, whatever achieves the goal of preventing sound waves bouncing around your recording space. But what if you record your audio using a built-in webcam and microphone (just please don't!), or while wearing a headset? We still recommend you optimize the recording space around the microphone you're using by stacking foams or fabrics in front and around your recording area and absorb those errant sound waves.

Pro-tip: When recording audio, make sure you record at least three to five seconds of the room tone, the silence of the recording room. You will use this sample of the room tone to do a post-production noise reduction effect on your raw audio recording. The silence you record contains the background cosmic radiation sound all recordings have, plus any drone from computer fans and traffic noise. With your room tone sample, you'll be able to remove these sounds from your audio file. The next sections detail other audio distortions you can prevent.

4.1.8. Mic placement

The closer a speaker is to their microphone the less room echo you will pick up. Sitting closer to the mic means sound waves from your mouth overpowers the fainter echo effects of your sound waves bouncing off the walls. Set up the microphone so that it sits about 10 to 15 centimetres (four to six inches) from the speaker's mouth. Headphone mics are designed to be closer to the mouth; however please note that the headphone microphones should be positioned to the side of the mouth, not directly in front of it or under the nose. If you can hear yourself (or the speaker) exhaling into the microphone, then their mic is far too close to, or in front of, their mouth and nose.

Another reason to sit a comfortable distance from the microphone is to avoid distortions created by speaking too loudly into the microphone. This is called "clipping" and it occurs when a sound exceeds the microphone's normal recording register.²⁴ Recording software and apps all include a visual where you see the register that moves from green to yellow to red when you're recording. Staying in the green and yellow is ok. Avoid being so loud that the light drifts into the red. That is when your audio is clipping. Do test recordings while monitoring the recording software's sensitivities and experiment with microphone placement relative to the speaker's mouth to avoid clipping.²⁵

4.1.9 Reduce audio distortions

We breathe as we talk, and our breath on the microphone can interfere with our audio quality. Puffs of air we use to make certain consonant sounds, sounds that we can't or don't notice in our daily interactions, become very noticeable when recorded. That is because microphones record soundwaves and the effects of people creating soundwaves: This section focuses on two common sources of audio distortion: plosives and air movement caused by exhaling.

Plosives refers to the puff of air used to create certain consonant sounds, such as "p" or "b". To understand

23 For more information, watch some "how-to" videos for studio recording set-ups for a USB microphone on a stand. Start here: "Free Ways to Reduce Echo for Better Sound Quality and Recording - Podcast Studio Build Out" (2019) <https://www.youtube.com/watch?v=xgL51PXbd1A>. The second video covers building a portable recording studio on a budget: "DIY Portable Sound Booth - Test & Review" (2013) <https://www.youtube.com/watch?v=rWgLCpaOazo>.

24 For quality audio recording for voice work, read this advice blog: "Peaking, Puffing and Popping: a beginner's guide for voice actors" (2012) <https://thraille.weebly.com/articles-blog/peaking-puffing-and-popping-a-beginners-guide-for-voice-actors?view=full>.

25 Here are two videos with tips on recording high-quality, studio setting audio for your podcasts, how-to videos or animation videos: Audacity Tutorial for Podcasting (2018) <https://youtu.be/G7IIUI7byzo> and "How to Record and Edit A Podcast In Audacity (Complete Tutorial)" (2018) <https://youtu.be/xl-WDjWrTtk>.

how plosives work, put your hand in front of your mouth and feel the air movement when you speak the word “pop” and “Bob” compared with saying “soda” or “June”. The puff of air in the plosive causes a vibration across a microphone’s diaphragm, the part of the microphone that is akin to our ear drums. Since the diaphragm converts all sound waves to a digital file, this means that although we can’t hear plosive in normal conversations, we can hear them in audio recordings. Think back to a time when you saw a presenter or speaker blow on their microphone to test if it’s working. Ugh. That is the sound you want to avoid. To avoid plosives or exhaling air that will vibrate the microphone’s diaphragm and create audio distortions, turn the microphone slightly to one side or turn and have the speaker sit facing slightly away from the microphone, not straight into it. This is a simple way to avoid exhaling onto the diaphragm while still recording the soundwaves you need.²⁶ Finally, invest in filters. Place a pop filter between you and your studio microphone. Put a wind filter over lavalier microphones and use a wind filter (also advertised as wind muffs or a “dead cat”) on your boom and shotgun microphones. Filters are the fastest and easiest way to reduce plosive and exhalation sounds that would otherwise decrease your audio quality.

Table 2.1: Different modes of content delivery using combinations of audio and video types

Video type	None	Computer Based	External Camera
Audio Type			
Studio Recording	Studio recorded Podcast	Screen capture tutorials or Animated videos	To-camera talks or Interviews
Live Recording	Live recorded Podcast	Webinars	Live lectures

In the next sections we provide advice for different modes of recording, review technical and equipment information for audio recording and provide tips to control your recording space set-up and to guide your experts. This section is informed by Table 2.1 from chapter three, which divides audio recording into two types, studio and live recordings, and links them to the range of content delivery formats, from podcasts to animated videos to documentaries. If you are confident working with these two recording formats, you are well on your way to mastering creating educational content.

4.2 Studio recording: webinars, podcasts and voice overs

Since we’ve covered controlling where you record, and tips on creating a cozy audio sound, now we will cover your microphone options for studio recording. The highest standard is to aim for is radio studio quality. A high-quality voice recording sounds like the person is having a conversation in the room with you. It has a slightly intimate quality, as if they were speaking from across a small table, not across the room, and it doesn’t have any of the audio distortions that can come from background noise or the sounds of wind or exhaling on the mic.

4.2.1 Equipment recommendations:

- a quiet location
- USB microphone installed (and selected as your computer’s default audio input) a microphone stand, with a pop filter
- (ideally) sound-absorbing fabrics placed around the microphone.

26 For further advice, see “Free Voice Over Lessons/Coaching - Avoid Pops and Plosives” (2019) <https://youtu.be/aKexn0rBUD8>.

4.2.2 Your microphone options: from best to worst

We won't recommend any specific brands, so it will be up to you to do research based on your budget and product availability in your country. Each year new online articles are published that rank the best new microphones for that year, and within different budgets. A quick internet search will provide you with several microphone options for your budget, and you can follow up on ones that seem to be a good fit by watching product review videos on YouTube. Our aim here is to provide enough information to empower you to decide which microphones make sense for your recording needs.

4.2.3 USB desktop microphone

If you will do more than one or two voice-over recordings for podcasts, how-to videos or voice-overs for animations, we recommend you or your institution invest in a USB microphone. A USB mic allows you to record directly into your computer. Here are things to keep in mind if you want to go the desktop microphone route:

- A mic's "polar pattern" determines where the mic picks up sound: e.g. from the front (cardioid), from the front and back (bidirectional), or 360 degrees sound sensitivity (omnidirectional). Avoid omnidirectional mics in favor of ones that only record sound in an area that you can point toward the speaker's mouth.
- If given a choice, buy a condenser microphone, not a dynamic microphone, for its increased sound sensitivity.
- Purchase a desktop microphone stand and a pop or wind filter when you buy a microphone. A desktop stand eliminates the noises made when people handle a microphone. The pop filter or wind filter reduces distortions caused by plosives and exhalations.

When you have set up your desktop microphone stand and microphone, attach the pop filter and then position the microphone's most sensitive recording area about ten centimeters from your mouth, and at a very slight angle. Do a test recording to make sure your audio doesn't peak (more on this below). If your audio is too loud, you can move farther away from the mic (or the mic farther from you). If your audio barely registers in the yellow, move nearer to it (or it nearer to you)²⁷.

4.2.4 USB Headset

After a USB microphone, the next best option you for studio recording is a headset with a USB connection. It is a step down, quality-wise, from a USB microphone, but if you won't be doing enough recording to justify purchasing a desktop microphone, and want to get more use out of it in Zoom meetings, for instance, a headset will work fine.

As with desktop microphones, placement is key. Don't position the microphone so close to your mouth that people can hear every inhalation or exhalation. Also don't position it so far away as to be inaudible, or to pick up the room echo in addition to your voice²⁸.

4.2.5 Built-in microphone (webcams and computer)

Please don't use your computer's or laptop's built-in device to record content that you want to present as a professional output. Just don't. That's the best advice we can give. Just don't. The problem with built-in

²⁷ For more information on audio, watch these two videos: "How to Properly Use a Mic - Audio Guide for YouTube Videos & Twitch Streams" (2018) <https://youtu.be/BDWnPXgOkU0> and "Mic Placement - Podcast Performance Coach Tip" (2015) <https://youtu.be/TuQxy7shV3Y>.

²⁸ "Get the best sound out of your headset mic" (2017) <https://youtu.be/jnvO4sdEsFU> and "Headset mic positioning" (2018) <https://youtu.be/HkNjU9oUU>.

microphones is they will always be quite far from where people sit and speak, and then they treat all sound waves in your recording space the same. In addition to recording your distant voice, your microphone will record all the echoes in the room. If you must use a built-in microphone then position your mouth as close as reasonable to the microphone, speak directly at it and surround it in sound-absorbing fabrics.

Using the voice recorder app on a mobile phone, set reasonably close to the speaker, will result in better quality audio than a computer's built-in microphone. If you are recording a webinar you will edit later, we recommend telling the speaker to use their mobile phone's voice recorder app to double record their audio and then send you the .wav or .mp3 file. In post-production, replace the built-in camera recorded audio with the better file from their mobile phone.

4.2.6 Change your computer's default audio input settings

After you have installed your USB microphone or microphone headset, set your preferred audio recording equipment as your computer's default audio input source. Go to your computer's audio and video settings and review the default settings. When you use an audio program, the default settings on your computer determine where it looks for the microphone and speakers. By default, these will be the equipment pre-installed on the computer, not the ones you installed or have plugged in using a USB connector.

In your Settings, select the equipment you prefer as your audio input default. Please note that if you select a USB device as your default, but do not have it plugged in when you start your computer, you may have to select it by hand in the program you are using after you plugged it in, since your computer defaults to a back-up device if your preferred default equipment cannot be found by the system. Your audio output options are also located in this area, if you want to select a different output than the computer's in-built default.

Podcast Tip: Intros and Outros

If you are recording a podcast, spend some time creating a 5 second introduction to your podcast. This might include a voice over with information about the podcast, speakers and/or the podcast topic. There are online resources for Public Domain or Creative Commons license music you can use, just provide attribution.

4.3 Recording with Audacity

If you don't already have access to software that records your audio, we recommend a free and open-source audio recording/editing software called Audacity. It has a simple interface and can work with a wide array of audio formats. Further, Audacity includes more editing features than you will ever need, and there are video tutorials for learning specific editing effects. Invest an hour or two into learning this software and you will produce high-quality audio²⁹.

4.4 On-set and live audio recording

4.4.1 Equipment recommendations:

- mobile phone (one per audio input) with audio recording app
- lavalier microphone for the main audio
- TRRS extension cords, if needed
- a boom and its boom mic or shotgun microphone for back-up audio (wind filter if needed)

²⁹ You can download Audacity for free at <https://www.audacityteam.org/>.

→ (if possible) sound-absorbing fabrics to reduce background noise and room echo.

If you are filming a public talk, rules 1, 2 and 3 for recording a public address are: never, never, never rely on the conference room's external loudspeakers as your primary audio source. You will never get good audio relying on ambient room sounds. It will sound distant, with echoes and as if it was recorded in a box. If you rely on the lecture hall sound system, or worse your mobile camera's built-in microphone, you will also record:

- the sound every person within range of your mic makes (coughing, whispering),
- any sounds broadcast over the speakers (the speaker shuffling their notes)
- cosmic background noise (soft hiss) broadcast by the room's sound system
- every audio distortion made by the microphone (feedback, plosives).

When filming a video on location or on a set, the challenges in recording outside of a studio booth are the same ones as for a controlled recording studio environment: background noise, the noises caused by sounds bouncing around the room, and plosives from the speakers. You have more control over these factors on a set or location than when you are asked to film a live talk, but your aim is always to control these factors as much as possible. In Table 2.1 we categorized recording on a set as 'studio recording', which is sort of true. We categorized it as such because you have significantly more control on a set compared with a live talk where you can't, for instance, build frames with sound wave absorbing blankets around the speaker.

4.4.2 Control Background Noise

If you haven't read the section above on mitigating background noise for studio recordings, go ahead and read that now as the advice applies here. If you have influence over determining the recording location, pick the location that is best for your audio recording needs in terms of acoustics and background noise. If you cannot influence the recording location, scout it and develop strategies to mitigate background noise as much as possible.

4.4.3 Room echo

The bigger the space you record in, the more it will echo. The more hard surfaces you have in your recording space, the more it will echo. However, unlike in a studio recording, you can't simply throw pillows and blankets at this problem to make it go away. So, how can you solve it? On a set use a lavalier microphone as your main audio and place it properly on your speaker. Lavalier microphones, properly placed, will record the speaker as they talk, and their volume should overwhelm any room echo, and lavalier recorded audio will be better than that from a shotgun microphone.

If you can, hang sound-absorbent blankets. If you have the budget, staff and time to construct a frame on which to hang sound absorbing fabric on your set or on location, we recommend you do it³⁰.

4.4.4. Always record back-up audio during live events

The major difference between our in-studio recording and our out-of-studio recording is that we always double-recorded our out-of-studio audio: the main audio was recorded through the lavalier microphone clipped to our speaker and we recorded back-up audio using an external boom with a shotgun microphone attached. Avoid the nightmare scenario of recording your content, only to realize the lavalier microphone didn't pick up the audio. It is better to have a back-up recording that you don't end up using than not having one.

30 To see the improvement in sound quality achieved by adding sound absorbing fabric to your recording space, watch this video: "Acoustic Blankets for Set or Studio" (2017) <https://youtu.be/C-WkWkDMxdQ>.

4.4.5 Lavalier microphone

Also called lapel mics, lavaliers are small microphones, ideally with a foam covering to serve as a pop filter and wind filter, that can be clipped to a speaker's clothing. Less expensive versions have connections for plugging into a mobile phone via the headphone plug. More expensive versions can be linked to a mobile phone via Bluetooth. We aren't going to recommend any products in particular, but if you go with a lavalier with a wire attached to the same mobile camera for on-set filming, know how long your wire needs to be in order to reach from your expert to where your mobile will be set up. You may need to purchase a TRRS extension lead (not a TRS). Make sure the extension is long enough and test it out before filming. You don't want to discover you need someone to run out and buy a new or different extension cord while the expert is on set, waiting to be filmed.

During a live speech, it is best to record separate audio and video files: the lavalier mic on the speaker and, for back-up audio, a shotgun mic attached to the mobile phone camera with everything recorded as a .wav file.

4.4.6 Lavalier mic placement

Lavalier mics work best if the expert is wearing a jacket or similar clothing with a lapel.^{31 32}

Avoid clipping the mic where it might rub against other clothing or jewellery. If they are not wearing a jacket, have the speaker put the phone in a back pocket, or inside pocket or similar. If they will remain seated the entire time, for a seated interview for example, you can run the cord behind their chair and leave the recording unit on the floor.

4.4.7 Boom and boom microphone placement

If you record on a set or on location, create a plan for a back-up audio recording. The back-up audio is there in case there is a problem with the main audio recording. You don't have to have a boom, boom mic and boom operator, but when you record on set or on location, you should have a back-up audio strategy. We ended up using back-up audio only a few times, but it is far easier to open up your back-up audio file and sync it to your original video in post-production, than it is to schedule the expert to come back in, rebuild the entire set and re-record that particular segment to patch the problem section. Does using a back-up audio file mean your audio quality may shift for part of your video? Yep, it sure does. Can you and/or your client live with that? That we can't tell you. You have to decide based on your time, budget, and access to your expert if you want to double record your audio on the day and live with any changes in audio tone and quality or if you want to do pick-up shots where you try to recreate the original recording and film replacement scenes for your final cut. If you decide to go with pick-up shots, make sure you add the days you'll need to your production timetable.

A boom mic is better for an on-location or on-set recording. To use a boom mic, you first need a boom. For our projects, we repurposed an old broom handle, attached a shotgun microphone on a shock mount and secure it with duct tape³³. After that, we ran audio extension cords along the broom handle- taped down at the top, middle and bottom to prevent them knocking - from the boom microphone to the mobile phone. The boom operator kept the phone recording the entire session with the mobile in her back pocket to have her hands free. Finally, we popped on a long fuzzy sock over the broom handle end to prevent our microphone from picking up the sounds created from handling and repositioning the boom pole³⁴.

31 For tips on how to clip on a lavalier mic, watch this video: "How to Properly Put On a Lavalier Microphone" (2016) <https://youtu.be/BjMg--3-Sxl>.

32 Watch this to learn "How to Properly Put On a Lavalier Microphone" (2016) <https://youtu.be/BjMg--3-Sxl>.

33 This video compares a professional versus a homemade boom microphone. "\$10 DIY Boom Pole better than the Real Thing?" (2019) <https://youtu.be/1uthPQTucQE>.

34 To hear the difference between using a boom and a shotgun microphone, watch this video "SHOTGUN vs BOOM microphone... ever wondered the difference? Here you go!" (2019) <https://youtu.be/E1CdQeiUyo4>.

Explain to your boom operator their work comes down to balancing two competing needs: putting the microphone as close to the speaker's mouth as possible while staying out of frame³⁵.

The boom operator looks to you as the director to know where the frame begins so they know to stay above it, if they are booming from above, or below it if they are booming from below, and move the boom with them as they move or between speakers if they are conducting an interview.

4.4.8 Shotgun mics and placement

Shotgun microphones are commonly used to film on-location shots. This unidirectional microphone is built to detect audio in a narrow space, hence the need to aim it directly at the speaker. If using a lavalier or boom mic is impractical, a shotgun mic will be your solution. When we filmed live talks, we used shotgun mics attached to our main camera's audio, rather than boom mics, to record our back-up audio.

We recommend doing tests with your shotgun microphone to get a sense of the distance and width it records in. To use a shotgun microphone, attach it with the cold shoe mount and plug it into your recording device. Point it at the desired sound source and hit record. Be aware that, since you are recording audio at a distance, you will pick up more ambient background sound with a shotgun microphone than a lavalier or even a boom mic. This is the reason we used it only for our back-up audio, and instead relied on lavalier and boom mics to record our main audio.

Boom Mic or Shotgun Mic?

A boom mic is preferred for recording interviews or dialogue delivered to camera because you can put the microphone as close to people as possible as long as the microphone stays out of the frame. A shotgun microphone picks up sounds in the direction it is pointed and are used when you film from a distance.

4.4.9 Naming and storing your audio files

If you record audio and video separately, elaborate on the naming convention for your file storage that we described in the last chapter. Let's say you recorded a public address with a lavalier microphone on the speaker's jacket, call this Jane Doe Address Main Audio.wav. If you also film a wide shot from amongst the audience and use a shotgun microphone, call this Jane Doe Address Camera 1 Shotgun Mic.wav.

To review, whenever you record you want to control the physical space, perhaps even laying out and hanging blankets to help absorb sound waves from hard surfaces such as uncarpeted floors and empty walls. Record dedicated audio using lavalier mics and back-up audio from a second microphone that is either a shotgun or boom mic. Run a pre-filming audio quality test before the shoot if you can, so you can get a sense of the sounds you will record and make any last adjustments.

4.5 Unique challenges of Q&A sessions

Often the expert encourages audience questions. This can be a problematic situation. Although Q&A sessions are expected in many public talks, they can present legal uncertainty if you want to publish the video of the event. While your speaker consented to having their image and face recorded, the audience members have not, and obtaining informed consent from each audience member can be a prohibitive amount of work and some participants will not want to be filmed or recorded. In pre-production, design shots such that your camera angles only capture the presenter.

³⁵ This video on how to boom your microphone during a live shoot helps visualize the work of the boom operator: "How To Be A Boom Operator" (2018) <https://youtu.be/Ft8FgcUZbxU>.

Recording high-quality audio from audience members adds additional work, impacts your equipment needs and so requires advance planning. If audience questions will be a part of your output, add this to the pre-production work phase and talk with the speaker about how to handle it. Explain the legal challenges. We have yet to have a speaker refuse to help us accommodate the legal restrictions against recording people without permission.

One option to avoid obtaining audience member consent individually is to write down their questions, cut their scene out and display the question as text in the video before cutting to the answer given. Another possibility is for the presenter to repeat audience questions before answering³⁶. The advantage for you is less work later in post-production. For the speaker, it ensures everyone in the room heard the question. If you chose repeating questions as a solution, your expert will forget to repeat the question. We've had speakers do great on repeating the first question and then immediately forget to do it for the second. Expect this. After all, experts have a lot to think about while on stage, and your sound needs are probably way down the list.

Agree with your expert beforehand that you will intervene and get them to restate the question each time. Remind them of this arrangement when you mic them up for their talk, and stand somewhere during the Q&A where you can catch their eye to give them a 'repeat that' hand signal, or quietly interrupt them to say 'can you repeat the question'. Get permission to interrupt them if they forget to repeat the question beforehand of course. If you simply interrupt them during the Q&A by constantly telling them to repeat the question, they will rightly become annoyed with you. When they understand you're helping them capture content for future video audiences, they will appreciate your interventions instead of finding them disruptive.

4.6 Directing voice actors and live speakers

As the director, it's up to you to control the speed and pacing of narration or give advice to those doing a podcast interview or delivering a webinar. You may need to teach people how to use their microphone. Your job is to direct them so they give their best performance and, more importantly to you, give you great material to edit into a video. Below we provide suggestions and tips for you and your expert.

4.6.1 Timing narration and voice-overs

A higher standard of audio and performance quality is expected when someone is reading from a script, because you can do multiple takes. You also have greater control over the pacing and flow of the delivery. By cross-referencing your storyboard and script, you should estimate how long each scene will be, and how long the overall video will be. Make sure you conform to time restrictions placed on your video and work backwards, dividing time across the scenes and allowing a few seconds of space between scenes if necessary. This will give you the ability to say "I need you to say these lines in under 10 seconds" to get the pacing right to meet your time limit." In post-production you can add longer pauses between scenes to allow for, say, a visual transition from one image to the next to indicate to the audience that a new topic is being introduced.

4.6.2 Vocal warm-ups

Warming up the voice and mouth muscles is good advice before recording. Encourage your expert to warm their vocal cords up (they can mute themselves or go into another room if they want privacy) by doing a few bars of la-la-la-la-la-la-laaaaaah up and down their octave range. When we speak, we might use different parts of our vocal range, and you don't want your expert to get a frog in their throat when they are using an unused part of their vocal range for emphasis or effect.

³⁶ A fade effect works well here to represent the time lost since fades imply time has passed. See the editing chapter for more information.

4.6.3 Mouth muscles warm up

Crisp, clear speech is characterized by commanding use of consonants. (Try saying that sentence out loud as a warm-up for yourself!) Crisp enunciation can also help non-native English speakers catch every word. Train your expert to use a slightly slower than normal speaking rate with well-formed and clear consonant sounds. To achieve clear enunciation, work with your expert on consonant exercises that over-exaggerate consonants. They should not leave consonants off the ends of words or mumble through them³⁷.

The lead author of this chapter likes to rap (yes, rap) before recordings. Rapping demands full focus on consonant sounds. It warms up the mouth muscles and develops lyrical dexterity as your mouth works to form a series of words in quick succession. The musical Hamilton is great for warm up materials with fun and challenging word combinations. A personal favorite are lines from the song 'Right Hand Man'³⁸. The bold font highlights the consonants that should sound sharp, crisp sounds.

***They're battering down The Battery, check the damages.** (brrrrah)*

***We gotta stop them and rob them of their advantages.** (brrrrah)*

Let's take a stand with the stamina God has granted us,

Hamilton won't abandon ship, yo' let's steal their cannons.'

4.6.4 Slower speech than normal pacing

If you listen closely, newsreaders speak at a slower pace than people do in normal conversations. This helps them enunciate and it increases listener comprehension. Speaking at a slightly slower rate than normal should naturally improve the clarity of your expert's speech. People think faster than they can speak, and your expert may be tempted to rush through some words to get to their next idea. People speak faster out of nervousness as well. Try these two tips to slow them down. One option is to do a slow breathing exercise with them. Slowing their breath may slow the pace of their speech. You can also ask them to rehearse their answer and then say, 'That was good, now say it again but more slowly.' Repeat two or three times, until they get to a pace you find comfortable, then compliment them and encourage them to use that pace during the recording.

4.7 Conclusion

This chapter provided specific information and practical advice on recording high-quality audio for educational outputs. The advice included a crash course on the basic equipment you will need in a multitude of recording settings, technical advice for recording formats, advice on how to set up and optimize your recording space, and tips for working with your expert to get a great performance. To test that you have retained the key points from this chapter, do the following:

- Assess your possible recording spaces and create strategies for improving the audio quality.
- Assess your equipment: what do you already have and what do you need to obtain?
- Do a "practice run" with your equipment, and experiment to optimize your sound.

37 "Quick vocal warm-up vowel and consonant articulation" (2012) https://youtu.be/iOL_ufHoNrA.

38 You can find these lines at timestamp 2:09 – 2:22 here: "Hamilton: Right Hand Man" (2017) <https://youtu.be/GTGz0--02C4>.

5. Video: Studio and Live Video Recording

By Kristi Winters and Paula Schäfer



Image: 'Untitled' ³⁹

People will remember your video's visuals when they think back to your content. Creating those visuals will be easier if you have a clear idea of what each scene should look like, the reason why those visuals were selected, and how they support or reinforce your educational content. This chapter provides advice on the visual components of your educational outputs. By the end you'll have a clear path to follow for creating high quality videos.

Educational videos can take many forms, from PowerPoint slides to live recordings. Given how many options you have for your video's visuals, the amount of information in this chapter may seem overwhelming. To make it easier, we start this chapter with information that is applicable to all visual content. We present a general overview of video information every director should know, then we present sections dedicated to different visuals styles where you can get specific information. We review educational content made on your desktop, including broadcasting a webinar, using screen-capture recording software for a website tutorial or software interface, or an animated video. We then move on to recorded or live talks as educational videos.

By the end of this chapter you should know:

- your recording equipment options and guidance on technical specifications
- how screen recordings and animation work
- your filming space and how to optimize it

³⁹ by Vanilla Bear Films <https://unsplash.com/photos/JEwNQerg3Hs>

- tips for lighting and framing your scene, either on-set or on-location
- how to get the best performance out of your experts
- some multitasking tips for first-time directors.

5.1 Technical specifications for video recordings

Some technical information is applicable to all video formats. Videos, like audio, can be recorded in different levels of quality. We recommend you record and produce your educational videos using the **16:9 aspect ratio**. It is the most common format. If you will create social media promotional videos in a different aspect ratio, create a separate storyboard to fit what you need within your frame.

Record your videos in high definition **1080p** whenever possible, or in the slightly lower resolution, but still high definition **720p** format. Some mobile phones now allow you to record in **4K resolution**, but only rarely will this level of quality (and file size) be relevant. Whether you use a screen recording software, a mobile phone's camera, or a DSLR camera, here are the settings we recommend you select when you are given the options:

5.1.1 Video setting recommendations:

Picture size: 16:9

Picture quality: 1920 x 1080 (or 1280 x 720)

File format: .mp4 (or whatever file types are compatible with your editing software)

Frame rate: 30 frames per second

Output file format: .mp4 or any accepted by YouTube⁴⁰.

5.1.2 Organize your video files

Videos will take up a large amount of space on your mobile phone. It's a good idea to move your files from your phone to cloud or desktop storage as soon as possible. In the pre-production chapter, we gave advice on preparing a location for your video files and a folder structure to organize them for your editing phase. Based on that prepared work, you should be able to name your video files on set before uploading them. Use the same file keywords and naming structure for the audio recordings you upload from the set, and any still images or graphics you plan to include in your final video.

5.2 Desktop-based video content

Broadcasting from or recording directly onto your computer desktop is a popular way to communicate educational content. In this section, we discuss recording your desktop to make how-to videos for software or a website interface and using still or animated images to create educational content. Chapter seven is dedicated entirely to supporting your use of webinars.

A general piece of advice when creating how-to videos. Early on we advised you to 'show it and tell it'. This is doubly true for training videos. Reinforce information about the software workflow or a web interface by adding text to the video. Display text over your screen-capture or you can use it in a transition effect, such as a fade, to break up the tutorial into themes, or into the workflow steps, to help the viewer understand the goal of the next step, or where in the workflow they are. You can reinforce certain ideas or phrases by adding them as text. Especially if you are introducing a new concept or idea, or you want people to associate your product with certain values or outcomes, reinforce the message with on-screen text while the voice-over is speaking the word. Plus, text takes much less time to add to a scene than finding or creating a new moving

⁴⁰ "Supported YouTube file formats—YouTube Help" (n.d.) <https://support.google.com/youtube/troubleshooter/2888402?hl=en>

image. Visually 'refresh' your scene with new words popping up over the image and reduce the amount of work you have to do.

5.2.1 Record your desktop screen

The two ways of creating your video visuals with your computer are first, recording your computer's desktop screen (e.g. PowerPoint slides, software or a website), and second, assembling images into a series or into an animation. A benefit to these is that you can do them without purchasing extra equipment, such as lighting or tripods. This may mean you are the one responsible for creating the PowerPoint and giving the webinar talk, or it may mean you have to do the animation work for every scene. If you, as the director, are also in the role of the expert, make sure you give yourself enough time to do both roles well.

5.2.2 Open Broadcaster Software (OBS)

If you are looking for a free, open-source option recording and streaming software to record your desktop screen we can recommend OBS (Open Broadcaster Software). Be aware! Mastering this software will require several hours in training and practice; add those hours to your pre-production timeline⁴¹.

5.2.3 Tutorial videos: screen-capture with live or pre-recorded audio

Tutorial (or how-to) videos are especially useful for those who need more time to learn an interface than would be given in a live classroom, or those who want a refresher for software they used years ago. You can teach people how to use a website's interface or software by recording a demonstration of it on your desktop. In addition, this form of video tutorial is accessible worldwide and year-round, meaning a user doesn't have to wait for a course to be offered to start using your product.

When it comes to tutorial video content, you have two options: live screen capture or stills.

5.2.4 Record your desktop

You can demonstrate a website's or a software's functionality by recording your interactions in two ways. The first is to record a one-off, live demonstration where you simultaneously record the audio of yourself explaining how things work while recording what is shown on-screen⁴². Your live recording should go smoothly if you planned out, step-by-step, what you will cover in the pre-production phase, and you do a recorded, yes recorded, full rehearsal to verify what will happen in the interface. A rehearsal helps you avoid the situation where your script describes one set of results but because you changed the spelling of a word, it alters the expected results.

Check the script against the software's or website's workflow. Note places in the script that need a pause, or where you need to add more information. Rehearsal is the place to find that out. If you have a team to work with, assign one person to read from the script while a second person follows the spoken instructions and moves the mouse or enters text. Watch your full rehearsal back for quality control. You may get lucky and record such a great rehearsal that you can use parts of it in your final video.

Your second option is to record and edit your audio first, then record the video file. Compared with recording

41 OBS connects to and displays information from your computer by connecting files on your computer within the software. OBS uses the term Scene to refer to a collection of video and audio Sources. Think of a Scene as an empty room and the Sources as the furniture you add. Once you complete your Scene built from Sources, use OBS to live broadcast to a hosting service such as YouTube, or record to your desktop in .mp4 format, then import it into your editing software. See more at "Streaming 101 - Introduction to OBS" (2020) <https://www.youtube.com/watch?v=yTkpLd3tdbc>.

42 See more at: "HOW TO RECORD VIDEO LECTURES | Using OBS for Online Teaching" (2020) <https://youtu.be/zTjVBlInEiNI>.

a live version, pre-recording creates a more professional video style, without any verbal stumbles and with smooth transitions between sections. You can also edit out the few seconds of delay while the software processes a command. For the more professional pre-recorded look, plan out each scene and its accompanying lines of script during pre-production. Rehearse your script for natural flow, note in your script where you should add pauses between sections for flexibility in post-production scene transitions. You can record multiple takes, choose the best ones, then screen record the video to match your completed audio file. Doing it this way allows you to match the pacing of the software's function and your audio file. Edit your video file to slow down or speed up to match the audio instructions in post-production. Save your recording as an .mp4 into a dedicated folder on your desktop, then import the new video into your editing software to edit it further.

5.2.5 Still images over pre-recorded audio

If you don't have time to learn a new desktop video capture software program, you can create a tutorial video from a series of screenshots of your computer's desktop. Using PowerPoint, take a screenshot of your desktop as a slide's content then crop and resize the image in the slide to show only the information you want. After you have all your desired images, you can import your PowerPoint file into your video editing software. Each slide becomes its own image. Add your pre-recorded audio file, drop each image into the timeline, then lengthen or shorten its on-screen time to match your audio. Export the two files as a single .mp4 and do editing on the new .mp4.

5.3 Animation videos with pre-recorded audio

Short, animated videos are a great way to convey basic information to an audience. They are a popular mode for what are called 'explainer' videos – videos that introduce an idea, product or service. These videos are usually no longer than a few minutes, and their goal is to convey simple information to the viewer⁴³.

A note about animation work. Compared with other recording formats, (e.g. screen captures, live talks and to-camera or interview recordings) constructing animated scenes is the most time-consuming video construction work you will do. Of all the production work phase lengths we review in this chapter, animation should be given the longest amount of production time in your schedule (see chapter two). From the lead author's personal experience, it may take you three to four hours to record a keynote address. That includes lighting and audio equipment set up, recording the talk, and uploading all the files to a cloud. By comparison, finding, downloading, documenting for later attribution, importing, and working with the images needed for a ten second animated scene can take anywhere from 30 minutes to an hour.

5.3.1 Animation software and tips

At the time of publication, we are unaware of any free, open-source animation software options. However, Microsoft PowerPoint is commonly available in many workplaces, so we provide resources repurposing it into a software to make still-photo animation videos. If you are using PowerPoint to make your animation, we recommend you make your first video very simple, using only the images you need to convey the ideas. Check the footnote for a how-to video on using PowerPoint to create your own animated videos⁴⁴.

If you are looking to use a paid animation software product, the lead author has purchased and worked with both Doodly and Toonly. These packages offer pre-constructed backgrounds and more complex animation work that allows you to do more on-screen far more quickly than if you had to build each scene by hand.

43 For an example, you can watch "First steps towards data curation - A Day in the Life of a Data Archivist" (2020) https://youtu.be/w_B1CDWUx34.

44 To learn how to adapt your PowerPoint skills to create short animated videos, you can watch this video: "PowerPoint Animation" (2019) <https://youtu.be/OU5vyHaCCXg>

For your animation work to go quickly and efficiently, far more pre-production planning is required than for live videos. Plan what scenes will appear on-screen relative to what the script calls for, identify each image you want on-screen, then find and save them to a dedicated folder with file names you'll remember later. If you use Creative Commons images, or copyrighted works under Fair Dealings or Fair Use laws, organize that information as you find the images. Track each attribution in a spreadsheet file with all relevant information. Believe us that it is far easier to copy and paste attribution information when you decide on an image than it is to track down the original image and its license and requirements during post-production.

Build your visuals around the pacing and timing of your final audio version. In our animation video workflow, we recorded and edited in Audacity, exporting the final edit as an .mp3 file for use in the animation software. The timing of various animations can be adjusted to fit your final audio version, such as images or words appearing.

If you aren't sure whether to do an animated video, during pre-production conduct a test run by doing one scene from the script as an audio recording and create the animation for that one scene. Mark down how much time it takes you to create one scene according to your quality standards. Multiply that length of time by the number of scenes your storyboard calls for, and then double that time. Remember, things will inevitably go wrong, or will have to be changed, or lengthened or otherwise edited. This doubled number is the estimated time needed to create your animated video.

Also, because animation is not a one-shot recording in the way a keynote address is, it is more likely that the client or your manager will feel at liberty to ask you to redo a scene, add more images, or otherwise want changes to the version you sent them. Since you have the capacity to make those changes if they ask, and therefore will most likely have to say yes, padding your production time gives you the freedom to edit the video a second time. Even if they love your audio, effects and animation, and they have no editing requests, it's always better to be ahead in your production schedule than behind, always better to deliver your final video earlier than later.

5.4 On-set and on-location recordings

To record on a location or set, you'll need additional equipment. We start this section, as we started this chapter, by reviewing the equipment you'll need.

5.4.1 Equipment recommendations:

- tripod stand(s)
- smartphone tripod mount with a cold shoe mount
- key light, fill light and back light (all Cold White) and a light stand for each
- extension cords to power outlets (charge phones, power lights)
- backdrops (plus whatever equipment you need to set up your backdrop)
- sound absorbing fabrics (if you have them)
- hair and make-up supplies for the expert.

5.4.2 Tripods

For stable, level shots you need a tripod with a mobile phone fitting (or DSLR camera, if that's how you roll). There are a variety of options for a variety of budgets. If you want a second tripod, consider selfie sticks that double as a tripod. These shorter tripods are less conspicuous than a full-length tripod and can be set up on desks or tables and can give you additional shots at closer angles. When buying the mobile camera mounts that connect to your tripod, make sure it has a cold shoe mount to attach your shotgun mic. Camera mounts lacking a cold shoe mount will force you to find 'creative' ways to point your shotgun microphone at the speaker while filming⁴⁵.

5.5 Set design

The first concrete step taken to turn your video vision into a reality is in constructing the set. We use the term 'set' to refer to the space and equipment used to get the shots you need. The set contains everything inside and outside of the frame to get the best shot within the frame, e.g., natural and artificial lighting, the shot background, all the audio equipment, the wall with the power outlets, even a hair and make-up area on the day of recording. Each set will be unique based on the filming location and your needs. Here's a generic outline of steps to consider and then modify.

In the pre-production phase, you should have determined the shot types you need, and this determines the type of location you will need, what the background will be, whether your expert will be standing or seated, etc. Your storyboard will reflect all your set design needs, and smart planning combined with smart set design and construction should allow you to get every shot you need. The site you selected in your pre-production phase forms the basis of the floor plan of your set design and construction. Based on your pre-production work, the equipment list should include everything you need to build, light and mic the set. Before filming day, determine if you need to revisit the location to update any details before you show up with the equipment.

On recording day, arrive early enough before your expert to move or rearrange furniture the way you want and set up your equipment. Include space for a dedicated cast and crew work table where you can leave things and retrieve them again, such as spare lighting, audio equipment, scissors and tape, the make-up for your expert, and (if needed) a place to provide drinks/food.

5.6 Set construction

The most efficient way to film a to-camera video, a documentary-style interview, or two-person interview is to record everything in a controlled environment. In scouting pick a location that best triangulates between your desired visuals, your sound requirements and your lighting needs. After you reserved your recording space, draw a diagram of it and start planning your set. We review the workflows we followed in building, lighting, and recording sound and video on our set.

5.6.1 Use an equipment checklist

Based on your pre-production work, reverse-engineer and identify every piece of equipment you need to create the look you want within the frame. Say your plans call for you to use a fabric backdrop. Where will it go and how will you hang it? Will you pin it to a wall? Then tacks need to go on your equipment list. This is an example of the systematic list making you should do for each piece of equipment and assemble them into a checklist. This is the best way to make sure you have everything you need on the day.

⁴⁵ For more information watch "3 Best Smartphone Tripod Mounts" (2018) <https://youtu.be/NtMqniOlkyA>.

5.6.2 Video backgrounds and backdrops

The background you chose will establish the aesthetics of the video. If you will record against a white wall, we recommend you lean into the white wall option by making the space look infinite⁴⁶. Alternatives to a white wall are backdrops created from solid color fabrics⁴⁷. If you use a backdrop, make sure your camera placement and the subject's position fit within the edges of the fabric so they look good in the setting.

5.6.3 Filming on location

It is a safe bet to assume the room you selected for filming will need to be rearranged to accommodate your set. Step one when you arrive on location is to make a note of where the furniture was in the room and your last step will be to return the room to how you found it. Once noted, we moved things around to create the space we needed to construct our set and started setting up our equipment.

If you are not using a backdrop, examine everything you can see in the background that is in frame. This is where you can do that thing where you shape your fingers into a backwards and forwards L, touch your fingers to create a 16:9 dimension with your hand to mimic the camera's frame and peer through it to see what is and isn't in frame. Does a desk or bookshelf need to be tidied up before you record? Are there pictures of family that should be put away to protect their privacy? Is there a plant positioned behind them in a way that looks like its growing out of the expert's head? Move objects that stick out from behind the expert's head, clear away unnecessary objects, or arrange knick-knacks to minimize their presence. Everything in your frame should be placed there deliberately. After organizing the space, we recommend building your set in the following order:

5.6.4 Set up your tripod(s)

Set up your tripod(s) where you think you want it, turn on your mobile phone(s) camera and evaluate your intended framing. Is the shot level? Examine the height of the tripod and camera relative to your expert's height: are you filming them at eye level, lower or higher? How wide is the shot versus how wide you want it to be? If there are things in the frame that might interfere with viewers focusing on the expert or, if you can't move them around (such as an external window), rearrange your camera or tripod to eliminate or minimize the effect. We always recorded in a wide-angle shot to give ourselves maximal flexibility in the post-production phase.

5.6.5 Lights

Do not rely on overhead florescent lighting to light your set. Overhead florescent lighting is fine for real life, but it is not ideal for recording people's faces. It will create awkward shadows and faces can appear very flat and two-dimensional on camera. As the director you want a three-dimensional lighting effect. Professionals create texture and depth in their subject's face by manipulating where the shadows fall, and to control the shadows you control how your subject is lit – so control it. In addition, only use Tungsten or Cold White Lights to light your set! Why? Standard lightbulbs shine with a yellow hue, meaning your final recording has that same slightly yellow cast to it. To avoid doing additional color-correction work in post-production, we hung cold white light soft-box lights from light stands.

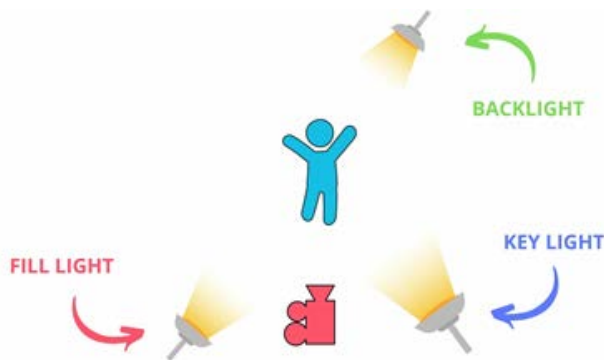
Professionally lighting your subject in frame requires specific equipment and planning in pre-production. If you don't have the budget for expensive lighting equipment, you can construct all your lighting equipment on a

⁴⁶ To learn how to light a wall to get a look of infinite white space, watch this video: "How to Get the White Background Look - YouTube" (2014) <https://youtu.be/mVlzzGBek0w>.

⁴⁷ To learn more about backdrops, watch this video: "How To Hang Backdrops Without Using A Backdrop Stand | Beginner Studio Filming Setup on a Budget" (2020) <https://youtu.be/6X6By75Mq6M>.

tight budget. The main lights on our set were handmade light boxes made from dimmable Cold White LED strip lights on a silvery, reflective plant hanger, white crepe paper diffusion, hung from twine on handmade PVC light stands (proof we did this on the cheap!) We built three lights and light stands for under 150 Euros in a day.^{48 49} We recommend beginners use the traditional three-point lighting: the key light, the fill light and the background light⁵⁰. Even if you don't construct your set, still think about your frame in terms of three-point lighting and try to emulate a three-point lighting effect as much as possible, see Figure 5.1. We review each type of light in turn.

Figure 5.1. Standard three-point lighting⁵¹



Key light. The key light is the main light used to light the subject and its usually the strongest. It is placed slightly to one side of the camera (up to 45 degrees on either side of the tripod). The key light will illuminate most of the subject's face, but you should leave some shadows. If your key light is too bright, your expert's face will look washed out and flat. In two-dimensional images we perceive depth through visual cues such as shadows. Think of the way painters use light and shadow to paint folds in robes or dresses. Slightly underexpose your expert using the key light so you have shadows to work with when you turn on your fill light.

The fill light is softer than the key light. Place it on the opposite side of the key light to light the shadows on one side of the expert's face (see Figure 6.1). Key lights illuminate the main part of your subject's face. It separates the face from the background, and the shadows it creates run north and south. This gives more texture to the face by softening the harsh shadows left from the key light and it distinguishes the left and right sides of the face. This contrast between the left and right sides of the face will help the expert look more 3-dimensional.

Back light. The final light is the back light, a background light. You've already used light to provide contrast in the face of your expert, now you create a sense of depth to your frame by lighting the background behind them. Pay attention to the shadows you create by adding the backlight or backlights.

Plan for time to adjust the lighting to your expert on the day. This is especially important if your expert wears glasses⁵². Your expert can use the time as rehearsal or practice their interview answers while you light and mic them. This gives them something to do while you set up your shot and mic them for audio, plus extra rehearsal time helps people get comfortable under bright lights while having a boom mic stuck in their face.

48 We were inspired to build our lights after watching this video: "\$40 DIY CAKE PAN LIGHT... Better than a \$1000 video light?!" (2019) https://youtu.be/IFON04_L3zk.

49 This video guided our construction of our PVC piping light stands: "Make a PVC Light Stand for Under \$5" (2010) https://youtu.be/lxN8_0kNJP.

50 Learn more by watching this video "Three Point Lighting Setup (Best Lighting for YouTube Videos Tutorial)" (2019) <https://youtu.be/G6W5wbPqzPw>

51 Source: StudioBinder (2021).

52 Watch this video for tips on avoiding glare shining of people's glass lenses: "The Easy Way to Light People With Glasses and Avoid Glare" (2020) <https://youtu.be/bMj1g9yFuBg>.

5.6.6 Audio setup

After you've properly lit your expert, the final step before shooting is to mic them up so you can record their audio. See the Audio recording chapter of this book.

5.7 Shoot for the edit

'Shooting for the edit' means giving yourself flexibility for the editing stage. This phrase can apply to different forms of filming, but the general advice is the same: frame your scene with the editing process in mind. Don't simply shoot the scene exactly as it looks in the storyboard. Think about what you need to film to allow the editor to construct what is in the storyboard. Familiarity with editing effects, such as jump cuts, zooms, fades, and pans, allows you to film a shot that will be turned into a different shot after applying editing effects. When directing, the lead author created shots to give her more than just one look in post. All the scenes were filmed as wide-angle shots suitable for cropping or shifting left or the right to make space for a picture-in-picture image in the upper left- or right-hand corners of the frame. If you have multiple cameras, you can frame the shot creatively and give yourself a different angle to cut to in post.

Before starting a scene, give it a name and number. Have your shot schedule (see chapter three) with you on the day of filming. Use an Etch A Sketch or papers on clipboard and a marker to track the different scenes. We used the same numbering or titling sequence from our storyboard notes to track the scenes. The other benefit of this make-shift clapboard is that video thumbnails are taken from the first frames of the video. If the first thing you record is the scene number/name, you can use those thumbnail images to help you find the right take to use in post-production.

Pro Tip

With so much to manage, you might get tunnel vision and only pay attention to the expert when inspecting your rehearsal takes. However, you must be aware of everything going on in your frame. Critically inspect the space around your expert and adjust things before you start the recording session. It's better to fix a problem before filming than to using editing tricks to fix things during post-production.

5.8 Rehearsals

Before doing a rehearsal, review chapter three for tips on directing your expert. These are two kinds rehearsals. The first is for the expert. They need to warm up their voice, rehearse their Burning Question text or how they will introduce themselves, etc. They can do this rehearsal while you set up the scene around them. The second rehearsal is for you, as the director. Film a take and then play it back and critique how it all comes together on camera. How does the footage look on the phone? Is the main microphone recording, do you need to move the tripod closer or further away from the expert, does any of the lighting need adjusting? In addition, consider uploading your test footage to your storage and watching it back on a monitor (add it to your equipment list). Does it look the same on a computer screen as on your mobile phone screen? The lead author recorded footage that looked great when played back on the original recording device, but on a monitor, the multi-colored background fabric looked more pixelated than she wanted. Learn from her mistakes and check your test footage.

Take a hard look at how your expert appears on camera. Are there any loose hairs, or a bit of fuzz on their jacket? Catch it in rehearsal. Take the opportunity to give them feedback and further direction. Are they holding a confident, steady gaze with the camera lens? Point it out and compliment them. Are they swaying their bodies back and forth to displace unconscious nervous energy? Encourage them to direct nervous energy into talking with their hands and do another take Do they start out speaking at a loud volume but then their voice shrinks

to a whisper? Encourage them to maintain a consistent volume. Use specific feedback and encouragement to your expert to build their comfort level and confidence.

5.9 Doing your takes: "chunk" the information

If you are doing extemporaneous takes, your expert may start a response and go on for way too long or on a tangent. To avoid this, show your expert how to deliver their knowledge in chunks: one section of information at a time. On set this means plan how much information the expert will cover in that scene at the start of each take. This will give them a known end point to aim for, and their delivery focused.

If you're filming an interview, make sure the interviewer question focuses on a single topic. Break up more involved questions into multi-part questions so listeners can follow the logic. Encourage the interviewee to pause and think about the goal or point they want to make before they start to answer. Many people start talking before they know where their sentences are going, or they have a complicated point and get lost along the way. This can be avoided by taking a few seconds to decide, tactically, what information needs to be conveyed before starting an answer. Doing some practice answers with your expert will help them find the right words.

Use chunking to help you shoot for the edit! Keep in mind that long, still, unbroken shots are not that exciting to watch and viewers will expect the use of jump shots to stitch scenes together in a YouTube video. By paying attention to how others cut together their videos, you can develop a feel for the pacing your video and how you can use cuts to signal moving from one point to another. With everything on set prepared and adjustments made based on your rehearsal, you are ready to do your main recording.

5.10 Take 1, Take 2, Take 3

Unless you have an exceptionally well-trained expert with impeccable camera skills and flawless recall of their content, plan for at least three takes of each scene. Remind your experts that this is typical when filming extemporaneous speaking. You've planned for multiple takes and they can be a good thing! From our experience, people's third takes are the ones we ended up using the most. That said, you don't have to record three takes of every scene if you get what you need during the first or second take.

You should also pay attention as to whether your expert is having an easy time or a hard time recalling and delivering all the information outlined for that scene. We just talked about chunking, but it is a guide, not a rule. Don't interrupt if your expert is on a roll. If they fluidly deliver information across scenes, just get out of their way and let them go. Intervene after the scene ends to give them any feedback you think necessary, review the content they covered and decide where to pick up the script for the next scene. If your expert is struggling to remember the content, say they have a list with five points of advice but struggle to get them in the right order, then break up the list into the points one and two, then film three, four, and five.

5.11 Invite feedback

We found that an interactive, between-scenes dialogue with our expert improved the filming. Invite their feedback on their performance as well, this is a co-creative process. Getting their feedback is important because they should also be satisfied with the results. Ask your expert how they felt about their delivery. They have given these sorts of talks before, so they know if they forgot something or phrased something awkwardly. Invite their feedback with something like, "I think that was a great take, I got what I needed. How about you? Are you satisfied with that one, or do you want to try another?"

5.12 Upload your files immediately after filming

The final advice in this chapter is to upload all your footage to your dedicated storage area, in the appropriate folders, as soon as you can after filming. Oftentimes the lead author would start the uploading video files before breaking down the set, using the time efficiently in multi-tasking. The chances are low that your phone or recording device will be lost or stolen, but you don't want to have to rerecord everything in the worst-case scenario.

5.13 Conclusion

Recording your visuals can go smoothly with systematic preparation and a strategy to deal with the many moving parts of a live recording, a live webinar, or an animated video. For your first video, focus on getting your visuals and audio to work together and reinforce your intended learning outcomes. That focus ensures your final video will accomplish your goals. As you gain confidence with directing, look for inspiration from other educational videos, experiment with mixing different types of content or construct more complicated shoots. However, your goal is always to communicate the information needed to achieve the learning goals. In the next chapter we review assembling the video and audio files you've recorded, together with post-production effects, to transform these elements into the creative vision you've been imagining since the storyboarding phase.

At the end of this chapter you should now know:

- your recording equipment options and tips on technical specifications
- how screen recordings and animation work
- your filming space and how to optimize it
- tips for lighting and framing your scene, either on-set or on-location
- how to get the best performance out of your experts
- multi-tasking tips for first-time directors.

6. Editing and Publishing

By Kristi Winters, Steve Shives and Paula Schäfer



Image: "Tank Edit"⁵³

Editing your video is part technical process, part art. It requires you to balance sticking closely to the storyboard of your intended vision while being open to changing things in reaction to what you record. In this chapter, we review the several workflow strategies for editing and assembling your files, provide guidance on the output formats, and give you a list of things you need to prepare for upload to YouTube. Consequently, this chapter reads more like a series of to do lists than the other chapters.

By the end of this chapter you should know:

- workflow strategies based on your output format
- technical considerations for editing
- aesthetic considerations for editing.

6.1 Audio Editing Workflows

Your editing workflow will depend on your output, but we found it best to start with audio. We therefore present an "audio editing first workflow" per output based on the open-source software, Audacity. If you use different audio software, adapt our advice to your preferred software.

⁵³ by Jakob Owens: <https://unsplash.com/photos/YmShwj8MN7s>.

Rather than write out text instructions, we provide bullet-point lists for our recommended steps in your editing process. These are suggestions for how you can organize your work, you should certainly adapt these for your personal needs.

6.2 Editing audio with Audacity

The audio editing techniques you should learn are noise reduction, compression and amplify.⁵⁴

Noise reduction. The noise reduction effect reduces background noise. Use a sample of a few seconds of silence or room tone to eliminate it from the audio file.⁵⁵

Compression. The compression effect evens out sound levels across the audio file, resulting in a more enjoyable listening experience. Mics pick up loud and soft sounds. The difference between the loudest sound and the softest sound is described as 'dynamic'. You don't want your sound file to have a wide dynamic range. If you do, the viewer will turn the volume up during the softly spoken audio sections and be startled when the loud sounds return.

Amplify. Aim for volume consistency across your video files. Aim for your volume to range somewhere between .75 and .85 dB.

Equalization (optional). Equalization allows you to customize the frequency range of the sound file. This effect is optional. However, if you want to create an effect such as someone talking on the phone, or you want to add more/less bass or treble sound to a file, use this effect.

Final step. Produce, export and upload your post-editing audio files as an .mp3. Give the file an obvious and versioned name. If you are making a video, import this .mp3 file into your editing software and produce a new video with the edited audio. Work with this new .mp4 and edit the video.

6.3 Podcast audio workflow

- Clean up audio recording.
- Produce master audio file.
- Add branded opening and credits closing, add any audio transition segments.
- Produce final version as .mp3.
- Review final version a last time looking for errors.
- Upload finalized version to the hosting site.

6.4 Audio for an animated video

- Record the script, clean up audio and produce the final version of the .mp3.
- Import .mp3 into animation software, construct animations timed to the final version of audio.
- Export completed animation video as an .mp4.
- Import final .mp4 animation into editing software.
- Add branded opening and credits/branded closing to animation file.
- Balance audio files across video segments to maintain a consistent sound level.
- Produce and save the final .mp4 file.
- Do one final watch-through for errors.
- Upload finalized version to the hosting site.

54 For more audio editing ideas, watch this video "How To Make Your Voice Sound Better in Audacity" (2016) <https://youtu.be/dQCB72S64L4>.

55 You can learn how to reduce background sound by watching this video: "How To Remove Background Noise In Audacity" (2016) https://youtu.be/10FFKI_0GSA.

6.5 Audio for webinar videos (assumes an .mp4 format)

If you had the expert record back-up audio on their phone, edit down the video file first and then extract the audio file for cleaning.

- Clean the file in Audacity
- Sync the mobile audio file with the uncut video in the video editing software to replace the original webinar audio.
- Produce this video as an .mp4 and do your editing work on the new file.

You can clean and enhance webinar audio by producing a .wav version to work on in Audacity.

- Extract audio file from .mp4 (as a .mp3 or .wav file).
- Clean up .mp3 file in an audio editing software.
- Produce final version as .mp3.
- Sync the cleaned webinar file with the uncut video in the video editing software to replace the original webinar audio.
- Produce this video as an .mp4 and do your editing work on the new file.

After this, both workflows have the same final steps.

- Edit the enhanced audio webinar .mp4 down to a final version (e.g. remove speaker errors, removing sections for privacy reasons, long sections of silence, etc.).
- Work with this .mp4 file to add slides, pictures, titles, transition effects, special effects and lower third bars (as relevant).
- Add branded opening and credits/branded closing to animation file.
- Balance audio files in video segments to maintain a consistent sound level.
- Produce and save the final .mp4 file.
- Do one final watch-through for errors.
- Upload finalized version to the hosting site.

6.6 Video editing

We provide general principles for video editing, not software-specific instructions as we did for audio, because there is no open-source version we can recommend. We list general principles to guide you as you work with your software's interface. Editing is not only a technical process. There is also an art to it. The next section is guidance on the art of editing, written by professional YouTuber Steve Shives. The last section reviews how to publish your video to YouTube.

6.7 The art of video editing

Aesthetics may not seem like an important consideration in the context of creating educational videos. Your primary purpose is to convey information to your audience in a way they can comprehend, retain, and use once they've watched. Technically proficient editing is necessary to achieve this purpose. Presenting an artfully edited, aesthetically pleasing video increases your chances of accomplishing this. Just as importantly, awkward or artless editing can distract the viewer from the subject at hand, making your video less effective.

In this section, we examine several basic elements of video editing from the perspective of aesthetics. Our aim is not to impart to you a mastery of this aspect of editing (no written manual could accomplish that), but to offer points to consider that will enable you to make your videos not just technically competent, but pleasing for your audience to watch and listen to.

We will consider:

- different types of transitions and when to use them
- when and how to use editing to alter your original shot composition
- how to most effectively use picture-in-picture and other graphics
- how to manipulate color to make your footage as eye-catching as possible
- when and how to add music to enhance your presentation and
- we will begin with a look at the most basic editing technique there is.

6.8 Transitions

Clicking on the “transitions” tool of a video editing program can cause a novice creator to feel overwhelmed. Even simple, inexpensive pieces of editing software can include dozens of options for transitioning from one clip to another. We narrowed our focus to a handful of basic transitions. Understanding how these transitions work, and when to use them in your project, should help you to edit in a way that is clean and artful, not clunky and distracting. We will review cuts, dissolves, fades, and wipes.

6.8.1 Cuts

Cuts are the most fundamental of transitions between shots. They are the transitions you will use most often, because they are the cleanest and least intrusive way of moving from shot to shot. Most of us are so accustomed to the visual language of edited films and videos that we do not even notice cuts. This is a good thing. Transitions should help the narrative of your video move forward in the best way to convey the message you are sending to the viewer. Cuts, particularly within individual segments, are usually the most effective way to do this.

Most cuts are between different shots. However, a commonly seen technique popularized by content creators on YouTube is the jump cut. This is when you cut between two clips of the same shot; for example, if you cut between two medium shots of your expert. There are times when a jump cut may be desirable but jump cuts can also have a startling effect on the viewer and can cause your video to come across as choppy or haphazardly assembled if overused. Be mindful of the impression your video is making on your audience. If you watch a sequence filled with jump cuts and it seems awkward or distracting to you, chances are it will feel the same way to your viewers.

Dissolves involve blending the end of one shot with the beginning of the next, so the two shots are briefly overlaid before transitioning completely from the first to the second. A dissolve is not as clean a transition as a cut, but it is also less abrupt. You may decide to dissolve from one shot to the next if you want to give your viewer a moment to consider a point that your expert has just made. Dissolves can also be a very effective way to slow down the pace of your video. Editing programs allow you to control the length of a dissolve. Long dissolves between shots can convey a thoughtful, contemplative quality. On the other hand, quick dissolves can help to smooth out the suddenness of jump cuts, if that is something you wish to avoid. Dissolves can also indicate the passage of time or a change of subject.

Fades are similar to dissolves in that they involve overlapping two visual elements. However, fades are transitions to or from a solid color. The most common type of fade is the fade-to-black, where a shot dissolves to a totally black frame. Fades to black are an effective way to indicate the end of a segment, or the conclusion of your video. You can also fade from a black frame into your shot; this is known as a fade-in and is a typical technique to use at the beginning of a video. Fades need not be to or from black. Fades to white are also common, although as with every other editing technique we are discussing, as the creator of the video you should be mindful of the effect a fade to white will have on your viewer as opposed to a fade to black. Fading to white can impart a feeling of optimism or spirituality, whereas fading to black gives a sense of finality.

Wipes are when the following shot is revealed progressively from one side of the frame to the other, as though the preceding shot were being peeled away. If you need help visualizing this, think of the transitions between locations in the Star Wars films. Like dissolves and fades, wipes can indicate the passage of time or changes in subject or setting. The four basic kinds of wipes are: horizontal, where the wipe effect moves from the left to the right of the frame, or vice versa; vertical, where the wipe effect moves from the top to the bottom of the frame, or vice versa; diagonal, where the wipe effect moves from one corner of the frame to the diagonally opposite corner; and clock wipes, where the wipe effect reaches from the center of the frame to the edge and sweeps around like the hands of a clock. Wipes are less common than the other types of transitions, because they are much more in-your-face. However, this doesn't mean that wipes are necessarily to be avoided. Use them, but use them considerately. If you think a wipe will better serve your purpose than a cut, dissolve, or fade, then use it. But don't go overboard. A simple transition is usually better than a conspicuous one.

6.9 Altering shot composition

There may be times when you find it desirable or necessary to adjust the shot composition of your footage in post-production. Perhaps you want to zoom in on your subject, to turn a wide shot into a medium shot, or a medium shot into a close-up. Using the zoom and crop tools of your video editor to create new shots from your original footage can be an easy and effective way to vary the visual presentation of your expert, and to avoid jump cuts.

So long as you were able to capture well lit, focused video of your subject in a resolution of at least 1080, you should be able to enlarge your original footage by as much as 50% without a noticeable loss of quality. Your video editor's sharpening tool can help to improve the quality even more, though this should be used very carefully; over-sharpened video can appear rough and pixelated, which is most likely not the effect you're aiming for.

When you enlarge your footage, you can also reposition your subject in the frame. However, this should only be done with purpose; if you are moving your subject to one side to make room for a graphic, for example. Absent such a purpose, best practice is typically to keep your subject occupying the same position within the frame as they were in the originally composed shot. Try to maintain the same eye level for your subject from one shot to the next. This will allow you to avoid a jump cut and make the transition between shots feel smooth and natural.

6.10 Using picture-in-picture and other graphics

The addition, adding graphics to your shot can greatly enhance the impact of your video, if used appropriately. One of the most common types of onscreen graphic is the picture-in-picture effect, where a graphic or video clip relevant to what the expert is talking about at that moment is superimposed over part of the frame, usually a corner. This effect allows you to illustrate what the expert is saying, or to provide supplementary information. The key principle to keep in mind is that the use of picture-in-picture or other onscreen graphics should enhance what your expert is saying, not distract from it.

Too many graphics on-screen at the same time will give your video a cluttered appearance and cause your viewer to spend more time trying to read the graphics than listening to your expert. Avoid graphics that feature large amounts of text, particularly if you're using a picture-in-picture effect that will only occupy a portion of the frame. If it is necessary to display a large amount of text (a relevant quotation, for instance), have the text take up as much of the frame as possible to make it easier for your viewer to read. For text or graphics that require more of the viewer's attention, transition to a full screen shot rather than superimposing them over your expert. As the director of the video, you have the power to draw your viewer's attention to where you need it to be. If a particular graphic is important enough to take up the full frame, then show it that way. If it is better served as a picture-in-picture effect above your expert's shoulder, present it accordingly.

Graphics can liven up your visual presentation, but only use them when they are relevant and necessary. Don't add graphics to your shot simply for the sake of it. Compose your shots, either in-camera or through enlarging and cropping, so that they work on their own if there is no need for additional graphics.

6.11 Manipulating color

Knowing how, when, and why to adjust the color of your footage is one of the most subtle and powerful tools at your disposal to present your content in a way that will be impressive and memorable to your audience. Manipulating color can take many forms. If you use B-roll footage, you may decide to differentiate it from the rest of your video by desaturating it, or by reducing the intensity of the color. Or you may decide to remove the color from it completely and present it as black and white. Most video editors have multiple tools that allow you to adjust color levels or transform color footage to black and white. Some also have preset filters that can mimic the appearance of particular kinds of film stock. You can experiment with these tools and filters to find what effect is the best for your project.

Even if you decide not to apply such obvious color effects, you may want to make some adjustments. No matter how well-lit and shot your raw video footage is, once you look at it in your editor you may find that the color comes across as flat or slightly washed out. Perhaps the blacks aren't quite black enough, or the colors aren't quite as bright as you would like them to be. Increasing the saturation or contrast can help with this. Some video editors also have tools that specifically allow you to deepen blacks and brighten whites, or to make your colors appear more vibrant. Use restraint with these tools, because oversaturated color can look just as bad as drab color. If you took care to record the best video possible during the production phase, your footage should require only minor adjustments to look its best.

6.12 Adding music

Using music to enhance the introduction and conclusion of your video can greatly improve your presentation and help to make it feel polished and professional even if it's your first video, and there are other ways to use music to improve your video besides as a soundtrack for your intro, outro, and transitions.

The addition of a music track to your expert's vocals can help to establish a particular mood or provide a sense of continuity across multiple shots or segments to help give your video a sense of unity. Adding music to your video isn't necessary, and you may well find that you find your presentation more effective without it, but it is always an option worth exploring if you have the time and the budget. There is a truly impressive amount of original music available on the internet that can be used for free (so long as you provide the appropriate attribution to the artist) or licensed for a small fee. The selection is so vast and varied that the most challenging part may be choosing the one piece of music that fits the best for your purposes!

Playing music as your expert speaks is a technique known as underscoring. It's also sometimes called "putting down a music bed". In layperson's terms, this means playing your music at a low enough volume relative to your expert so that it is audible but doesn't overwhelm or distract from your expert's voice.⁵⁶ This can be a tricky balance to find. Not every piece of music is suited for this application. This may require some experimentation on your part.

Editing with an eye toward art and aesthetics requires a different perspective than editing for technical concerns alone. The art of video editing, like any creative endeavor, is a highly subjective process. You can study the various kinds of transitions, the principles of shot composition, experiment with when and where to use graphics, manipulate color, or add music, but in the end it will come down to whether or not it feels right to you (or your client, as the case may be). For a novice video creator, this can be a source of uncertainty

⁵⁶ [Setting a tone with music is common in shorter videos, such as explainer videos. Underscoring longer videos may become distracting, however. If your longer video has multiple segments, consider including underscoring to set up and transition between segments. – Ed.]

and anxiety. Don't be afraid to turn to your collaborators or more experienced colleagues for advice, or to take inspiration from the work of others. And rest assured that the more videos you produce, and the more creative choices you're faced with, the more confident you will become in making those choices.

6.13 Workflow for public talks, to-camera, and documentary style videos

6.13.1 Edit your audio file(s) first

- If your main audio was recorded directly into your mobile phone, import all your clips in the order you recorded them into your editing software.
- Edit and save a rough-cut .mp4 version, using only those clips you think will be in your final cut.
- Produce a .wav or .mp3 file version of this rough-cut version.
- Edit the audio file to improve sound quality.
- Save the edited audio project, export your edited audio file as an .mp3.
- Replace the original audio file with your improved one. Either continue editing on this new version or produce a high-quality audio version of your rough-cut to edit in a newly versioned project.

6.13.2 Edit your audio file(s) when video and audio were recorded separately

- If you recorded your audio separately from the video, your audio file should cover the entire recording process as a single file. Import your original .wav recording audio file into Audacity.
- Quality check main file audio – do not cut sections out of this file. (Determine if you need to use the back-up audio file to repair audio problems in the main file.)
- Edit the audio file to improve sound quality.
- Save the edited audio project, export your edited audio file master as an .mp3.

6.13.3 Add the master audio file to your recording

- Import master audio file into your video editing software program into the same project as the rough cut it came from.
- Replace the original audio with the new master audio file. For those working from a rough cut version of the audio dropping in the new audio over the old from 0:00:00 should sync the two files immediately.
- If not, proprietary video editing software programs include video and audio syncing features. You can edit and adjust the files manually to sync them by hand.
- When the video and audio are in sync, produce an .mp4 of this video with an appropriately versioned file name.

6.13.4 Final steps

- Save your project. Produce a 1080p version of your final cut as an .mp4 video.
- If needed, circulate it for review and sign off by your client or superiors. If you need to edit the file, select which file version of editing makes sense based on the feedback.
- Give the approved output .mp4 a memorable name so you can find it later.

6.14 Publishing and promotion

Your video is finished! However, you aren't done yet. There is still a significant amount of work to do to get your video up on YouTube. In this final section, we give you advice on the workflow.

6.14.1 To publish immediately or to host a YouTube Premiere party?

You have options as to how and when to publish your video on YouTube. Use this information in conjunction with your promotion strategy. You can set your video to the following options:

- ➔ Public – once processed, everyone can see the video on your channel
- ➔ Unlisted – unlisted videos can be viewed if someone has the link to the video
- ➔ Private – only those you invite to view, with a link, can see the video
- ➔ Schedule – Set a date and time for the video to be released
- ➔ Premiere – Set a date and time to premiere the video, use the live chat to engage with the viewers before and during the video's premiere.

6.14.2 Create and upload thumbnail artwork

You've probably seen the still pictures that YouTube uses when displaying a video in its interface. This thumbnail image or artwork should include company branding when producing your output for a specific company. For webinars, the title slide often works as the video's thumbnail art. For other types of outputs, you can use PowerPoint to design a thumbnail and save it as a .jpeg or .png. If you have access to graphic design software, or apps, you can use those to create your branded thumbnails.⁵⁷ If you do not upload a thumbnail you've created yourself, YouTube will create them from your video at random.

6.14.3 YouTube video fields

To be efficient with your upload time, make sure you prepare the standard information every YouTube video requires. If you have several videos to upload, you can save time by repeating common information across your video series, rather than reinventing the wheel each time.

6.14.4 Video title

The title of the video will generally need to be approved before appearing on the client YouTube channels. Check with the person responsible for guidance.

6.14.5 Video description box

YouTube's description box allows you a space to write up a summary of the video's content. You can also add hyperlinks in this text area to link to content outside YouTube. See Appendix G for the spreadsheet authors created to track and standardized video information, wording and text format across multiple fields.

⁵⁷ For more information see: "How To Make YouTube Thumbnails On Your Phone (With FREE App)" (2019) <https://youtu.be/O5VzxDQqZkE>.

6.14.6 Metadata keywords

If you want people to find your video on YouTube, you should add metadata information on your video to be used by the YouTube search algorithm. Metadata can include key concepts in the title of the video, the content, the video creators, and who paid for it.

6.14.7 Upload your video

You've organized your thumbnail artwork, you have your approved video title, description box text and metadata tags ready to go. Time to upload your video. If you access to the channel, you can upload it and the supporting media immediately.

If your output is to be uploaded on a client website, send the video file link to its cloud location, the thumbnail artwork, video title, the description box text (with hyperlinks to sources referenced, licensing attributions, or published articles, if relevant), and metadata tags. For a client, submit the same to the relevant person, and when it is approved your video will be uploaded to the client YouTube channel.⁵⁸

6.14.8 Made for kids? New required field

A recent requirement for YouTube videos is for creators to declare whether the content is made for children. Our advice is for you to set your default as "No, set this channel as not made for kids. I never upload content that's made for kids." You can do this in your channel's Settings tab. Click Channel, then click the Advanced Settings tab. Under Audience, select: "No, set this channel as not made for kids. I never upload content that's made for kids." Click Save.

6.14.9 Select a copyright license

YouTube has two, and only two, options for videos uploaded to its platform: The Standard YouTube License and Creative Commons-Attribution.

The license you assign the video is a license for the video. If the content you include is licensed under any other Creative Commons license besides CC-BY, you can add that license information to the text in your description box. However, viewers can see whether you've given your video a standard license or CC-BY. To learn more about the different types of Creative Commons licenses, see the Creative Commons chapter.

Standard YouTube License: Similar to other forms of international copyright protections, a standard YouTube license grants YouTube the broadcasting rights. Your video can be accessed on YouTube for viewing purposes and cannot, without your consent, be reproduced or distributed in any other form. There are fair use and fair dealing exceptions to this, however.⁵⁹

Creative Commons-Attribution: You can add a CC-BY license instead of a standard license to indicate others may use your content as long as they provide attribution. You should only mark your uploaded video with a Creative Commons license if everything in the video can be used under CC BY license, such as fair dealing and fair use content. See the Creative Commons chapter for more information.

58 If you have to upload your own video, here is a step by step process of exactly what you'll have to do to upload your video and make it public: "How to Post Your First YouTube Video [Step-by-Step]" (2019) <https://youtu.be/w25FNPlnXXQ>.

59 To learn more you can read this blog article "Standard YouTube License vs. Creative Commons" (2021) <https://filmora.wondershare.com/youtube-video-editing/standard-youtube-license-vs-cc.html>.

6.15 Using cards and playlists to recommend other videos

YouTube offers two services to help drive people to your content. YouTube Cards appear as pop-up boxes in the video and include a link to other videos.⁶⁰

Another option is to create a playlist on your YouTube channel. When you create a playlist, you give it a name and can add videos – any videos, not only your own – into a collection. Playlists are essentially a series of links to videos, it doesn't re-host the content on your channel. After you have created a themed playlist, you can easily add relevant videos to it as upload them.

6.16 Time to promote your new video

If you've followed all the steps in this handbook, congratulations on your newly published video! Once the upload and processing steps are completed, you'll be able to watch your video on demand on your or clients channel.

Your final step is to promote your content. Let the expert who participated know where it has been published (if relevant), and then feel free to post the video link and a short summary, maybe using the text of the burning question, to various social media sites. The video can be embedded in websites, tutorial videos, for example. See the social media chapter for more information on getting viewers.

6.17 Conclusion

Video editing is part technical process and part art. It requires you to use, thoughtfully, the tools at your disposal to turn the image on the screen in the shared vision you created in the storyboard phase. This chapter provided you with advice, but more importantly, many outside resources in the footnotes, to help and support you if you are teaching yourself these skills. We've also given you a preview of what work still lies ahead after the video editing work has finished. Understanding well ahead of time all the work needed to complete your video project gives you a chance to work efficiently, and to create video titles, texts, and references in a consistent format. Finally, we outlined the key steps you will be confronted with if you are uploading your video to YouTube for the first time, and tips on how to handle the various components.

The production work may be over, but to help you feel more confident about your educational content creation, in the last two chapters of this Handbook, we give information about, and advice on, different social media platforms on which you can promote your content, and a chapter on creator's rights, copyright and Creative Commons relevant to your video productions.

By the end of this chapter you should now know:

- workflow strategies based on your output format
- technical considerations for editing
- aesthetic considerations for editing.

⁶⁰ If you want to add Cards to your videos to recommend other content, watch this "YouTube Cards Tutorial" (2015) <https://youtu.be/itZuoQWv2hl>.

7. Introduction to Preparing and Delivering Webinars

By Jennifer Buckley and Sergeja Masten



Image: "Untitled" ⁶¹

This guide provides step-by-step information about preparing and delivering webinars. Written by CESSDA, the guide is designed to help staff at data services who are new to doing webinars; but it may also be useful for others developing webinars, especially for academic, training, or educational purposes.

The guide includes key features of webinars including examples of different formats. It will discuss:

- the initial stages of getting a webinar set-up and ready to promote to participants
- features and examples of webinar software
- the key tasks of facilitating and presenting webinars
- options for webinar content including visuals and ways to interact with participants including question and answer sessions
- practicalities involved in the run-up, during, and after the webinar, such as testing and improving sound, changing presenters, and recording webinars.

The guide will discuss examples and steps using different webinar software. The general principles are similar for different software, differences in the functionality of webinar software can mean the details vary. At the end, there is a checklist to use for planning a webinar with sections on before, during and after. A checklist version of the information in this chapter can be provided as Appendix H.

⁶¹ by [StandSome Worklifestyle](#) on [Unsplash](#)

7.1 What is a webinar?

For this guide, we will think of a webinar as a live broadcast on a topic with an audience who have registered to attend. The broadcast usually lasts between 30 to 90 minutes with some interaction between the speakers and the audience through polls and questions. The broadcast can then be recorded and uploaded for others to watch.

Similar arrangements can apply for longer online events; however, longer events may require further arrangements such as multiple sessions, breaks and options for more interaction, which are not covered here.

7.2 Webinar software

Webinars tend to run through specialist webinar software such as GoToWebinar, Zoom and Webex. Webinar software shares features with software for online meetings such as the ability to share screens, change presenters and mute and unmute speakers. There is also crossover between webinar and meeting software with platforms such as Microsoft Teams and Skype for Business supporting webinar style live broadcasts. Other features of webinar software can include:

- facilities for attendee registration and feedback
- distinctions between presenters and participants
- poll or survey functions
- question and answer boxes
- live chat.

We have an increasing range of software options available, each with different features and facilities. This guide will not go into a detailed discussion of which software to use as you can find many up-to-date review articles for webinar software online. It does, however, give insight into some of the features that are available and how such features might be an advantage or disadvantage depending on what you want to do in a webinar.

7.3 Webcams

Often webinar software allows presenters to share a webcam in addition to their screen. The option to use webcams is becoming more common. The main advantage is that seeing the speaker can help attendees engage and follow the presentation content. Possible disadvantages to consider include:

- Adding additional visual stimulus might detract from content and compete with screen visuals.
- Streaming video takes more bandwidth, which can reduce quality/accessibility (less of a problem than it used to be).
- Speakers need to be aware of how they appear on screen, which can be more difficult for those who also need to interact with software.
- You can look awkward if your eyes move around a lot. Tips for avoiding this problem include having notes printed, or on another device, so you mainly just look up and down. You can also add something to look at near the webcam (such as a post-it with a smiley face).

7.4 Formats

The content of webinars can vary; for instance, there can be one or multiple speakers, there can be screen sharing of a presentation, websites or other software along with webcam streaming.

7.5 What type of event?

Overall, the event might work like an online version of a traditional seminar with a chair and one or more speakers followed by a Q&A session. Alternatively, your webinar might be more like a workshop with presentations, demonstrations, and activities.

Here are some examples that demonstrate different approaches:

- The “CESSDA Webinar - The GDPR and research one year on: experiences across Europe” (2019) consisted of a panel of data protection specialists. Brief presentations were followed by an interactive panel discussion.
- The “CESSDA Webinar - Data in Europe: Ageing” (2017) consisted of three guest speakers from major data resources. Each speaker gave a short presentation on their resource and the audience had a chance to ask questions.
- The UK Data Service “Webinar: Web-scraping for Social Science Research: Websites as a Source of Data” (2020) covered the step-by-step process of collecting data from a web page with examples of code written in the popular Python programming language.

7.5.1 Multiple speakers

Having multiple speakers can help make a webinar more interesting and engaging for the audience. It also reduces the demands on individual presenters. Some ideas for including multiple speakers are:

- having a chair to introduce and field questions alongside an expert speaker,
- dividing a webinar between two individuals, each covering a specific element, and
- including speakers with different perspectives – for example, the UK Data Service often runs webinars discussing available data on a topic that include a guest researcher explaining how they have used data.

Though positive, having multiple speakers (who may be physically apart) means you also need to manage handovers between speakers. Having more speakers can also make it harder to keep to time and to ensure good audio quality, especially with guest speakers outside of your organisation. Additionally, for speakers from other organisations, you may need to consider any restrictions on the webinar software they can access through their organisation’s computers and networks.

7.5.2 Interaction with attendees

For a live event, interaction with attendees is an important element of webinars but one that needs thought to implement. Methods of interaction include attendee polls and opportunities to ask questions, either by speaking or by writing. Some webinar software supports chat functions for attendees to comment and chat with presenters and to each other throughout the session. Another option is breakout rooms for smaller groups to meet.

There is more discussion on the practicalities of these methods below. In the early stages of webinar planning, it is useful to remember that implementing interaction takes broadcast time, which may mean limiting other content such as the length of presentations. You should also consider what forms of interaction are useful in your circumstances and how you might implement them in the software available to you.

7.6 Set up a webinar

This section discusses the initial stages of getting a webinar set-up and ready to promote to participants.

7.6.1 What you need to get started

To set up a webinar in the software, you will usually need the following information:

- title and description
- time and date
- registration and evaluation details
- speaker details including email addresses.

7.6.2 Title and description

Naturally, the title will describe your event; to make it clear, it can be useful to prefix the title with 'webinar'. Usually, you will be able to include a short description of the webinar on the webinar registration page. You may also want to include the same (or a more detailed description) on other relevant event pages. In the description, it can be useful to include the length of the session (as the software does not always specify a finish time).

Other information, you might want to include in the description:

- the level of the webinar (e.g. introductory, intermediate or advanced)
- the target audience
- speaker details.

7.6.3 Time and date

As a live event, you will need a date and time. You can find lots of blogs and online discussions on the best time to run webinars (with 11am or 2pm midweek as commonly suggested optimal slots).

More specific to you is the availability of the speakers. You may also need someone available to help facilitate the webinar (see below for more information about facilitators). When selecting a time, it is practical to ensure everyone is also available for the 30-60 minutes before the webinar start time. You can use this time to get everyone logged-in, check the technology is working and discuss any last-minute arrangements.

The availability of the software within your organisation may matter too as webinar software subscriptions may be limited to single use of the software. Beware, some software packages will let you schedule two events but not run them both simultaneously. If you are setting-up a process for managing access to the webinar software within an organisation, you may need a diary to manage bookings.

7.6.4 Registration

Being able to manage attendee registration is a useful feature of webinar platforms; especially as it can be combined with options to easily review the number registered, run reports on those registered, automate reminder emails and contact those registered.

There may be a default registration form that you can customise to include specific registration questions. You can usually edit the registration questions after scheduling the event, but they need to be finalised before the webinar can be promoted. If necessary or preferred, you can also use other systems for registration. In this case, you will need to obtain and send out a link to join the session to those registered.

When managing registrations, there can be options to:

- automatically accept or to moderate registrants
- limit the number of participants
- edit and schedule automatic reminder e-mails (e.g. in Zoom, reminders can be sent 1 hour, 1 day, or one week before the webinar start time)
- select the webpage that registrants get directed to when they finish registering.

7.6.5 Evaluation questions

Often webinar software includes the option to collect participant feedback directly after the event has finished. For example, in GoToWebinar and Zoom Webinar, participants can be directed to an in-built feedback form as they exit the webinar. In most cases, you may be able to add or amend your evaluation questions until the day of the event.

Alternately, you may be able to:

- direct participants to another service such as Survey Monkey, Qualtrics or Google Form for collecting feedback as they exit the webinar
- e-mail those attending with a link to an evaluation form (you may be able to schedule this to go automatically once the webinar has finished).

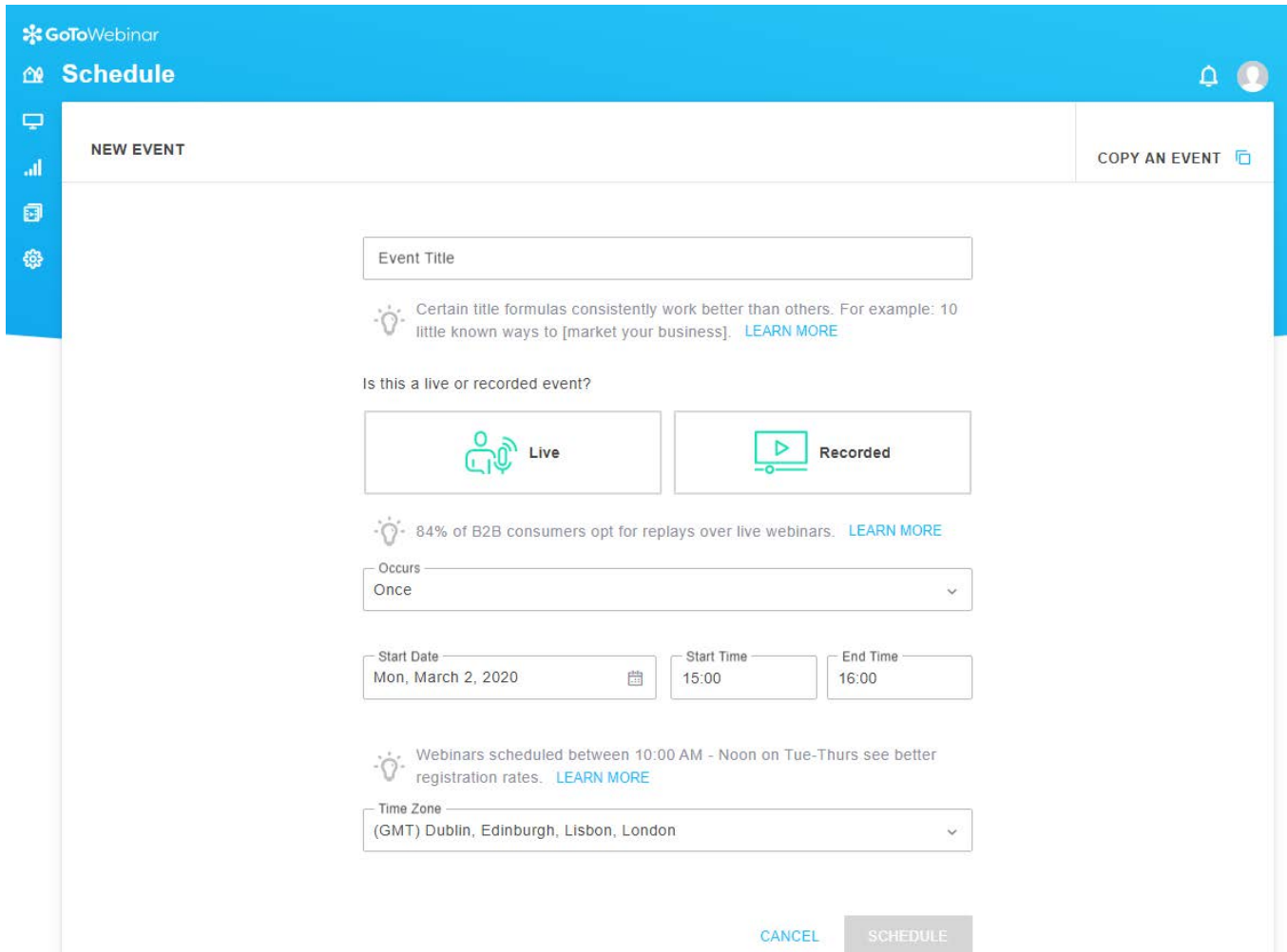
7.6.6 Speaker and facilitator details

To ensure all your speakers can join the webinar with the right settings, you may need to provide the details of each presenter (including their email addresses). In both GoToWebinar and Zoom webinar you can invite people to be pannelists by adding their email. Those entered as panellists will receive an invitation with a specific link for joining the webinar. See below for more details about webinar settings. In Zoom meeting, this step may not be necessary as participants to a meeting can share their screen and webcam. However, it is also possible to have only hosts and co-hosts share their screen; in this case, any speakers would need to be (co) hosts for all or part of the session.

7.7 Schedule the event in the software

The next step is to schedule the webinar in the webinar software (see Figure 7.1). Typically, the process is to log-in to the software and select the option to create or schedule a webinar.

Figure 7.1 Scheduling a webinar in GoToWebinar



The screenshot shows the GoToWebinar 'Schedule' interface. The top navigation bar is blue with the GoToWebinar logo and a 'Schedule' button. A sidebar on the left contains icons for home, calendar, and settings. The main content area is titled 'NEW EVENT' and includes a 'COPY AN EVENT' button. The form contains the following fields and options:

- Event Title:** A text input field.
- Tip:** A lightbulb icon followed by the text: "Certain title formulas consistently work better than others. For example: 10 little known ways to [market your business]. [LEARN MORE](#)"
- Is this a live or recorded event?:** Two buttons: 'Live' (with a microphone icon) and 'Recorded' (with a play button icon).
- Tip:** A lightbulb icon followed by the text: "84% of B2B consumers opt for replays over live webinars. [LEARN MORE](#)"
- Occurs:** A dropdown menu currently set to 'Once'.
- Start Date:** A date picker showing 'Mon, March 2, 2020'.
- Start Time:** A time input field showing '15:00'.
- End Time:** A time input field showing '16:00'.
- Tip:** A lightbulb icon followed by the text: "Webinars scheduled between 10:00 AM - Noon on Tue-Thurs see better registration rates. [LEARN MORE](#)"
- Time Zone:** A dropdown menu currently set to '(GMT) Dublin, Edinburgh, Lisbon, London'.

At the bottom right of the form are two buttons: 'CANCEL' and 'SCHEDULE'.

If you are an organizer or panelist for an upcoming webinar, it is normally best to have the desktop software installed on your computer as typically this ensures you have all the functions needed such as access to all the presentation tools, including drawing tools, shared keyboard/mouse control, polls and handouts.

Depending on the software you use, you may need to download and run .exe file to set-up or present at a webinar. This applies in the case of GoToWebinar and it can cause problems with firewalls; it is a good idea to check this in advance. In GoToWebinar and Zoom Webinar, you will complete a form with the basic details of the webinar. When selecting time, ensure you also select the corresponding time zone.

7.7.1 Customising and using templates

Once scheduled you will have options to edit settings including:

- registration questions
- polls
- evaluation questions

- automated reminder emails
- custom confirmation page and emails.

With some webinar platforms, you can customise the appearance by uploading logos and other images. Often you can copy details from a previously set-up webinar (including any logos, regulation, polls and evaluation questions). You can use this facility to create a template for your webinars.

7.7.2 Registration link

Once the webinar is set-up in the software, you can get a link to the registration page. You can use this link directly in advertising or alternatively you can include it on an event page under instructions for registering.

7.8 Plan webinar arrangements

The practical aspects of preparing for a webinar include becoming familiar with how the software works and sorting out the necessary equipment. This section discusses the major practical considerations you need when planning webinars.

7.8.1 Webinar controls: who can do what?

In most webinar platforms, controls vary for those organizing, presenting and attending. For example, GoToWebinar differentiates between organizers, panelists and attendees.

To give an idea of the differences, Table 7.1 summarizes the controls for each of these users in GoToWebinar. At one end, the person who logs in and becomes the organiser has access to the full controls. These include being able to start the webinar, select presenters and see the questions and chat. Those joining as panelists have features that allow them to present but they can't do everything the organiser can do.

Table 7.1 Controls for webinar organizers, panelists and attendees in GoToWebinar

Organizers	Panelists	Attendees
Launch the webinar	Speak (mute and unmute)	See and hear
Start a broadcast	Share screen	Ask questions (by typing)
Record the webinar	Share webcam	Download any handouts available
Launch polls	Chat with other organisers and other panelists	Raise a hand (if the option is enabled)
Choose a presenter	See and answer questions assigned to them	Speak (if option enabled)
Share screen		
Share webcam		
Speak (mute and unmute)		
Chat with other organisers and other panelists		
See and answer questions		
Assign questions to panelists		
Process the recording post-webinar		

These different settings have a practical impact on how a webinar runs and it is important to think through who can do what. For example, in GoToWebinar, Panelists cannot see all the questions posed by attendees,

which affects how you can manage a question and answer session (see below for more on question and answer sessions).

7.8.2 The facilitator

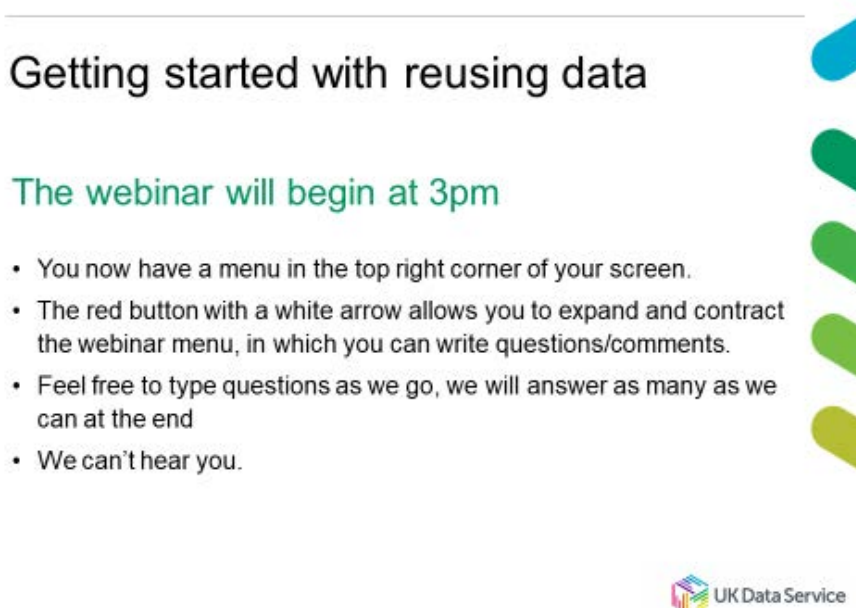
A good way to run a webinar is to have a dedicated facilitator running the session; this person may work entirely behind the scenes. Some of the main tasks of a facilitator are likely to be:

- logging on to the software to have maximum controls
- ensuring everyone has the right control settings
- recording the webinar
- selecting and changing presenters
- launching the webinar broadcast
- launching polls
- addressing any issues around muted and unmuted presenters
- answering questions from attendees or directing questions to speakers
- alerting presenters to problems.
- Facilitating can also be combined with other tasks associated with webinar organisation such as:
 - scheduling the webinar in the software
 - organising a webinar practice session
 - ensuring good audio quality
 - monitoring registrations
 - uploading handouts
 - managing the downloading and editing of the webinar recording
 - downloading post-webinar reports.

The facilitator will need to know what to do if there are any problems. See section below on common issues.

7.8.3 Starting a webinar

Figure 7.2 Example of a holding slide to show before the start of a webinar



Getting started with reusing data

The webinar will begin at 3pm

- You now have a menu in the top right corner of your screen.
- The red button with a white arrow allows you to expand and contract the webinar menu, in which you can write questions/comments.
- Feel free to type questions as we go, we will answer as many as we can at the end
- We can't hear you.

UK Data Service

Webinar software can allow you to start your webinar in different ways. For example, in GoToWebinar and Zoom webinar, those involved in facilitating and presenting can all sign-in before the webinar starts (they can use this time to chat and check anything they need to). At this point, any attendees trying to join the webinar will get a holding screen. For example, in Zoom Webinar, the holding screen says “Please wait. The webinar will begin soon” followed by the start time (see Figure 7.2).

You can then choose to either:

- start the webinar before the scheduled time (e.g. ten minutes before). You would then need some additional holding materials such as a slide with information about when the session will start, common problems and how the session will run. If you do this, it is very important that presenters mute themselves until the start time.
- start the broadcast just a minute or two before and go straight into an introduction. In Zoom Webinar, it can take a few moments for everyone to enter the meeting, so don't start too soon.

7.8.4 Physical environment

Though the event takes place online, those involved need to consider the physical environment as well as the technical set-up needed. Naturally, those presenting will need a quiet location with no (or limited) interruptions. You may need to:

- Silence phones.
- Put a ‘Do not disturb - webinar in progress’ sign on the door and wherever needed to ensure sounds are not picked up. For example, if walls are thin, you may need signs along a corridor
- Avoid rooms with other sources of sound.

You will need a good internet connection with enough bandwidth (see the technical information provided by the webinar software company). Ethernet (wired) connections are more reliable than WiFi. If only WiFi is available, check the strength and be as near to the router as possible.

Two monitors can be useful, especially for those combining a presenting role with aspects of webinar organisation (such as reviewing questions). With two monitors you can dedicate one screen to the presentation and the other to the webinar control panel. Test in advance how to show the correct screen for the event.

Additionally, logging in on an extra device can be useful. On this device you can monitor how the webinar appears to attendees; it could also provide backup in case connection is lost on a main device (though this applies most when the extra device uses an additional internet connection). A telephone can also be useful as you can call into a webinar in the event of problems with power or internet connections. If running a lot of webinars within the organisation, it may be useful to create a dedicated webinar room or station. If using webcams, you need to consider lighting, possibly bringing in additional lights.

7.8.5 Audio

Naturally, audio quality is important for webinars and many steps can be taken to improve audio quality. The points below are basic steps for achieving quality audio that can be shared with all speakers at the webinar:

- Avoid using built-in microphones. Instead, use either a plug-in microphone with pop filter or a headset with a microphone.
- Built-in or external speakers can cause an echo; reduce the speaker volume on your computer or laptop to a low level or turn off when you're using another device (like a headset).
- Webcams with microphones can pick up additional noise and cause an echo. Using a webcam for your audio is not recommended.
- Close any unused programs running in the background that could be using up bandwidth.

Other simple steps for improving your audio quality can include warming up your voice and standing-up to present. You should test your audio set-up in advance to identify problems and identify your best set-up.

7.8.6 And more

Beyond this basic advice, more detailed steps for improving audio can include improving equipment such as microphones and acoustic treatments for a room. For advice on these issues, see on the Audio Recording chapter.

7.9 Plan webinar content

Webinar content is likely to consist of multiple elements including both audio and visual content. This section contains information about developing webinar content as you plan your webinar.

7.9.1 Webinar introductions

The introduction of a webinar is important for:

1. setting the tone
2. conveying important information that can help attendees engage with the session.

Example webinar introductions:

- *"Hello everyone and welcome to today's session on..."*
- *"I'd like to introduce today's presenter..."* plus structure of the session (attendees muted, 30-40mins talk followed by Q & A)
- *"A recorded version of this webinar will be available from..."*
- *"We'd love to hear from you!"*... explain how participants can join in/ask questions.

We can also include simple details that support the webinar appearing as a dynamic live event such as mentioning:

- that it is live
- the number of attendees
- the location of speakers.

Including photographs of the speakers within the introduction or briefly turning on webcams at the start also help the audience engage. You can also ask your audience questions about their background or what they would like from the session (see the section on options for attendee participation).

7.9.2 Scripts

Presenting online allows the option to use notes and scripts that are out of the audience view (though this depends on your set-up and the use of webcams). Notes and scripts can help avoid verbal digressions or stumbling, which might be more obvious when the audience cannot see you and are therefore more focused on what you say. Reading a script presents some challenges though as you can sound unnatural or robotic. Other advantages of preparing a script, even if not reading verbatim, include helping you keep your content focused and helping with timing the webinar. However, a full script is time consuming to prepare. If you do decide to use a script, table 7.2 below includes some tips for scripting.

Table 7.2 Tips for scripting a webinar

Plan content	Perfect the script
<ul style="list-style-type: none"> → Draft the script. → Don't forget the intros, handovers and the close. → Write out whole sentences, not fragments. → Make a note of any places you may need to pause for polls or interaction. 	<ul style="list-style-type: none"> → Make it sound natural. → Practice, Practice, Practice. → Read the script aloud and edit. → Notice where things don't feel or sound natural and edit. → Write how you talk; not talk how you write! → Maintain an active pace with tonal inflections. → Be confident and upbeat.

7.9.3 Screen sharing

Easy screen sharing is a great feature of webinars. Usually, you should be able to show any application running on your PC including slides, websites, software and other media such as video. However, latency may mean fast changing images or quick moving live demonstrations do not always come across well; it is therefore important to test how it looks beforehand.

7.9.4 Slides

Slides are often a key feature of webinar presentations. As attendees are facing their screens, slides receive detailed attention; more so than in face-to-face presentations where attendees are further from the screen and spend time looking at you. It is therefore worthwhile spending time developing your slides.

Some principles for slides include:

- ensuring they support rather than compete with what you are saying
- use minimal text (to avoid audience reading rather than listening)
- keep some movement through transitions or use multiple slides building on each other.

The above principles may mean you have more slides than you might have for a live face-to-face presentation.

A further feature to consider is the level of detail you can include. Compared to face-to-face presentations, a webinar audience will find it easier to see smaller details on slides such as parts of diagrams. You can also reduce the font size. When preparing slides, you should also consider any organisational branding requirements and including any details about copyright.

7.10 Attendee participation

Within a webinar, we can use a variety of methods for attendees to actively participate.

7.10.1 Polls

Polls offer a simple way to get your audience actively participating and can provide you with useful information. Typically, webinar software has integrated polling facilities where you ask a question to the audience and immediately see responses. This applies to GoToWebinar and both Zoom and Zoom Webinar, where you can set up multiple polls and launch them at any point during the session. In both GoToWebinar and Zoom, the polling facility is easy to set up and operate, though it is more clunky and less attractive than others. You can also use external polling tools; Mentimeter is one example.

The greater challenge with polls is to meaningfully integrate them into the webinar content. Some examples of how we can use polls include:

- gathering information about prior knowledge from participants
- allowing participants to select an option – for example, they could select which topic to focus on next
- including quizzes for fun
- assessing learning using quizzes

For any poll, you need to factor in enough time to go through the following five stages:

- introducing the poll
- launching the poll
- waiting for attendees (or most attendees to answer)
- closing the poll
- sharing (and responding to) the results

7.10.2 Questions and chat functions

Webinars can include various forms of typed communication through question and chat functions within webinar platforms. The functions available and how they work, vary across webinar software platforms.

For example, in GoToWebinar, a chat feature allows organizers and panellists to interact with each other and to broadcast messages to attendees. Plus a questions feature supports attendee participation. Attendees can type questions and send them to organizers and panellists. The organiser (who is the only one who will see all questions) can then respond:

- through the questions feature privately to the individual
- through the questions feature to the whole group
- assign a question to a panellist
- to questions verbally as part of the main webinar content (perhaps dealing with all questions together as a question and answer session).

Other webinar platforms support a more open chat feature that allows everyone to join in throughout the webinar (for example, at the time of writing Zoom webinars allows the webinar host/organiser to select whether attendees can chat with everyone or only the host). Zoom webinar also has a Question and Answer feature, where questions can be types in and then answered live or typed.

It is also possible to use external applications in addition to functions within the webinar. For example, Mentimeter supports Live Q and A sessions. There is also the option to use Twitter with a webinar hashtag (#WebinarNameQuestions). External applications require some time and effort for you and attendees but they can increase the options available for meaningful interaction.

7.10.3 Talking and raising hands

Often webinar attendees are muted by default (the case with GoToWebinar and Zoom Webinar) but it is often possible to unmute participants (in GoToWebinar up to 25 participants can be unmuted at one time). This function can be useful for webinars with smaller audiences or for introducing more dynamic interaction in a Q and A session.

Alongside options to speak, most software give participants the option to 'raise their hands' to get attention. For these features to work, participants need to feel comfortable speaking, therefore consider what is likely for your audience.

7.10.4 Question and Answer sessions

Webinars often include a dedicated question and answer session where the audience asks the presenter(s) questions related to the webinar content. For smooth running, it is a good idea to have a plan based around the following questions:

How will the audience ask questions? As described above, options for the audience to ask questions during the webinar can include the audience:

- typing questions within the webinar application into a questions box or chat feature (depending on what is available)
- typing questions into an alternative application such as Mentimeter
- asking questions by 'raising hands' and talking.

Typed questions tend to be more common, especially for larger audiences.

Another option is to collect questions in advance through the registration form or a survey prior to the webinar. These will then need to be collated so that you and your panellists can access them during the webinar.

Regardless of the approach used, the audience will need to know the plan for questions. Typically, you will need to explain at the beginning and then again at the start of the question session.

Based on GoToWebinar, one approach is to start the webinar by encouraging the audience to ask their questions at any point by typing into the questions box but explaining they will be answered at the Q and A session at the end. This approach means the audience can ask questions as they think of them and there are questions ready at the start of the Q and A session.

How will the presenters and audience know the questions? With typed questions, the next issue is how the relevant person and the audience will know the question to be answered. A good option here is to have someone review questions and ask them to the relevant presenter. For example, using phrases such as "We have a question about X, someone would like to know...". This approach brings several benefits, including:

- adding dynamic interaction and avoiding dead air as people review questions
- ensuring the audience knows the question
- gives the presenter time to hear the question and formulate an answer.

If alone, you can read out the question in full to the audience before answering. You may want to avoid names to avoid any issues relating to GDPR.

In both cases, the person reading out the questions will need to be able to access them. How this works depends on the software. For example, in GoToWebinar only the organiser can see the questions unless the organiser assigns questions to panellists. Therefore, in GoToWebinar, you might need to consider making others an organiser (you can have more than one organiser). Alternatively, the organiser can assign questions to a specific panellist or share questions with others through a chat feature or external application (such as in a shared document). It is also possible for questions to be added to slides or another document and shown to the audience.

Tip: In GoToWebinar, you can make the questions box larger. Drag it out of the control panel and maximise the box by clicking the icon at the top right. Doing this will give a much larger view of the questions.

7.10.5 Handouts

Most software also allows you to upload files that can be downloaded by attendees.

7.10.6 Licensing and copyright

Webinar licensing and copyright are issues to consider at an early stage, especially if you have multiple speakers whose requirements may vary. For example, some funders and organisation prefer contents to be shared with a Creative Commons CC-BY license and for the license details to be embedded within the webinar content. These requirements therefore need to be discussed with any guest speakers in advance, to work out the best licensing options and how these will be displayed. For detailed information about licensing, see Chapter 10: A crash Course in Creative Commons for more information.

Zenodo can be used to store and share content. Zenodo gives a DOI. You can even pre-register your webinar outputs with Zenodo prior to a webinar and include the DOI within the webinar content.

7.11 The run-up to the webinar

The final stages of preparing for a webinar are about ensuring you have an audience and getting comfortable with the plan and content. In this stage, it is useful to schedule a test webinar for everyone involved.

7.11.1 Tracking registrations

If you are using webinar software to manage registration, you can log-in to get an update on registrations.

In GoToWebinar, you can obtain reports on those registered that include all the details collected on the registration form. It might be useful to share this information with presenters so that they can consider the audience. However, the report will include personal information and you therefore need to consider any restrictions (due to GDPR) on how you share and store the information.

You can also send messages to those registered.

7.11.2 Plan a test session

A test session before a live webinar is very useful, especially for those new to doing webinars. In this case, the test is more about the set-up and plan, you don't need to go through everyone's content.

A test session could be 1-2 weeks before the real event or earlier if you have concerns about equipment or facilities that you might need to act on. In a test run, try to involve all speakers and facilitators and get everyone to use the same technical set-up as they will in the live webinar.

If you have guest speakers, an additional test session might also be worthwhile. In the first (without the guest speaker), you can focus on your own familiarity with the software and plan for the webinar. In the second, you can focus on making any guest speakers comfortable with the software and plan whilst also testing their audio. Typically, you will schedule the test session as you scheduled the main event (see above). Everyone then joins the test in the same way they will join the live version.

7.11.3 In the test session

The format of the test session will depend on your plan for the webinar and the software you're using but the following are likely to be useful.

Familiarising yourself with the webinar controls

Check everyone can find and navigate the control panel. Ensure everyone has access to the controls they need. For example, in GoToWebinar, you might want to make panellists organisers so that they can do more things. In GoToWebinar there are also options to change the appearance of the controls. For example, you can undock specific sections and make them larger. This can be useful, for getting a better look at audience

questions. You can also open a box with the audience view to see how your screen is showing to the audience.

Check audio

If anyone has poor quality audio, you can try the following:

- What equipment is being used? A USB microphone or headset with microphone is better than in-built speakers.
- Are they using Wi-Fi? A wired internet connection is better than Wi-Fi. If using Wi-Fi, can they move nearer the router?
- Is there a webcam with microphone on? It could be a source of echo.
- Can you close any unneeded software programmes?
- Is there background noise? If so, is it possible to move to another room?

How you will start the webinar

Run through the process for starting the webinar. See the section on Starting a Webinar above for more details.

Tip: in GoToWebinar, when first designating a presenter, the presenter will get a popup box asking if they want to start the broadcast; make sure the person knows this might happen and what they should do.

Recording the webinar

Depending on software, recording might start automatically when the webinar starts or you might need select Record. In GoToWebinar, the recording will start automatically when the broadcast starts. The recording is then saved locally (therefore ensure you have enough space on your computer disk for the full recording).

Changing presenters

If there is more than one presenter, practice changing presenters. The process will depend on the software you use. In GoToWebinar, only those classed as organisers and the current presenter can change the presenter.

If you have a facilitator, it might be useful for them to make all these changes. To help the facilitator know what to do, speakers can include cues such as "I will now pass over to X". You can also practice ways to fill airtime during the switch; for example, if a change takes some time, you might remind the audience how they can ask questions.

A useful trick in GoToWebinar is to use the option to pause the last presentation so there is no visual gap between presentations.

As part of the switch, the new presenter may need to agree before they become presenter. Practise having any presentations ready in full-screen mode.

It is also an option for organisers to share their screen and to give mouse control to a panellist.

Mute/unmute

When you have multiple speakers, while the current speaker is talking other speakers should mute themselves. In the practice session, check everyone knows how to mute and unmute themselves. In case anyone forgets, the designated facilitator can also mute and unmute people. But be aware if the facilitator mutes a presenter only the facilitator can unmute them.

Polls

Run through the whole process of doing a poll and note when polls come in the session. Check that:

- the person managing the software will know when to close a poll
- you know how to switch from a poll back to other content such as slides (in GoToWebinar, you must close the poll, before you can return to screen sharing).

Questions and Answers

Test out how audience questions will be managed. If possible, get someone to ask a question like the audience will in the real webinar; then, run through the process of reviewing, assigning and responding to the question.

7.12 Preparing for the worst

The test session will largely make sure you are ready for the live version. However, in the run-up, there are a few additional steps you can take to help in the case of problems on the day.

Have more than one organiser. In GoToWebinar, a webinar will end if there is only one organizer and that person leaves the webinar. It is therefore useful to make another person an organizer to ensure the webinar continues even if the main organizer goes offline. For other software, check out what happens if persons in different roles leave and re-join the webinar.

Back up speakers. In some cases, you might want to have a back-up speaker in case of problems.

Collate presentations. It is a good idea for speakers to circulate presentations before the event. If someone's screen freezes, it can be possible for another person to show the presentation. When possible, upload presentations to the software for the audience to access. In GoToWebinar, you can upload handouts in the webinar settings.

Telephone joining. It is often possible to get an audio connection to a webinar via a telephone. This feature can be another form of back up as presenters who have lost connection can still join to present. This would work best if any visuals had been previously shared and therefore could still be shown and if the presenter had access to their own presentation for reference. Details of how to join by phone are usually included as part of a joining invitation.

Printed copy of the presentation. A printed copy of the presentation can be a useful backup in case you need to continue presenting but experience technical problems.

Emergency communication channels. It can also be a good idea to have a designated channel of communication (especially if physically apart) such as email or messaging via phones. Therefore, if someone loses connection they can still be reached.

Plan for "what will happen if...". It is worthwhile having a plan for what will happen in different scenarios. For example, if the main presenter loses connection the facilitator might need to step-in and explain what is happening to the audience. You might wait a short while to see if they can get re-connected or move on to another element of the webinar. In this time, you can try to communicate via the emergency channel. If they cannot connect via their computer, they may be able to phone in for audio.

7.13 The webinar and webinar follow-up

Your preparation and test session will ensure you are ready for the day of the webinar. On the day itself, you should do some quick pre-broadcast checks before starting. After the webinar, you can get a recording and access your feedback.

7.13.1 Pre-broadcast

On the day of the webinar get everyone involved to log-in beforehand, around 30-60 minutes beforehand. If the software you are using allows, log-in without starting the webinar broadcast; this way presenters and facilitators can talk without the audience being able to hear. If not possible to start without broadcasting, do some checks early on when attendees are unlikely to have signed in.

Check audio

See above for steps to take if there are any audio problems.

Prepare computers

Adjust settings so that everyone has the correct controls. For example, in GoToWebinar, make the required switches from panelists to organisers.

Everyone should also take the following steps:

- close unrequired applications and turn notifications off
- get all the required applications ready
- customise webinar control panel to suit yourself.

Get the (first) presenter ready:

- check you have the correct view showing
- ensure setting is full screen.

Finally, everyone mute themselves until it is time for them to speak.

7.14 Enjoy the webinar

Follow your plan for starting the webinar. At this point, work through the session as planned. Remember most people will speak too fast rather than too slow, so take your time. Remember to convey key information about the plan for the webinar. If transitions take longer than expected, try to avoid dead air by reminding participants of how to ask questions or tell them about leaving feedback at the end.

7.15 Feedback

If you have set-up an evaluation form, after the webinar you can download the feedback. In GoToWebinar, you can download a report containing responses to the evaluation questions alongside other information collected for each participant. You do it in the Analytics section with the 'Build report' option, with options to download Excel or CSV files. Remember that this way of collecting feedback is not anonymous and the report will include personal information. You therefore need an approach to manage how to store and anonymise information.

7.16 Getting a recording

Once finished you may need to download or locate your recording. In GoToWebinar, the recording is stored locally and will be in a GTM .wmv file. When the webinar is ended, GoToWebinar gives the option to convert the recording to MP4. MP4 is a very usable video file format that you can edit and upload to websites.

All the processes of producing a video are covered in Chapter 7, Editing and Publishing. However, for quick reference, see below for brief descriptions of tasks included in this stage.

7.16.1 Editing

Once you have your video, you can review if editing is needed before it can be uploaded and shared. Edits might consist of:

- cropping anything recorded before or after the webinar content
- adding additional visual and audio such as title or closing sequences
- removing sections in the middle of a webinar.

Video editing requires some form of video editing software and there are many open and proprietary software options available. You can find useful reviews of the options available online. Simple edits such as cropping can also be done after uploading on to YouTube and you can find online tutorials detailing the steps.

7.16.2 Subtitles

You have the choice to add subtitles to your video. Subtitles are helpful for those with hearing difficulties, non-native speakers and those in environments where it might be hard to hear the audio.

Though with clear benefits, adding captions for a full-length webinar will take time; however, YouTube (and some video editing software) can help reduce the scale of the task. Subtitles are files that accompany a video that contain text and timestamps, which when combined make text appear with the video at a specified time. The task therefore involves generating the text and linking it to the correct timestamps. YouTube and other video editing software include options for auto-generating closed captions. The auto-generated text will include errors, but it can be edited and editing text takes less time than generating a transcript from scratch. The editing can be done in YouTube and you can find tutorials on how to do this online.

7.13 Upload

The final stage is to upload your video for others to watch the recording. The steps will depend on where you are uploading to, but the same general issues will tend to apply. A common option is to upload a video to YouTube, which allows easy streaming, and then embed the video into another website. To achieve this, you will need to:

- prepare information required by YouTube to accompany your video including title, description of content and tags
- use an auto-generated thumbnail image (the image shown before video starts) or upload a preferred image
- provide information about licensing (see Chapter 10: A crash Course in Creative Commons for more information)
- get the embed code to add the video to another website.

8. Social Media: Promoting Your Content

By Ben McClean and Kristi Winters



Image: "Social Media in Colorful Alphabets"⁶²

This chapter provides an overview of various social media platforms. This is not an endorsement of any of the services. We provide it so you may make an informed decision. Before deciding whether to promote your content on social media, and where, consider the data collection and privacy issues.

As an educational content creator, it is not enough that you plan, storyboard, script, record, edit your educational content and upload it. To achieve maximum impact and reach the widest audiences, you need a social media presence to advertise your outputs across multiple online platforms*. In this chapter we will provide you with information and technical advice on how to plan your social media content during the script writing and storyboarding phases. In addition, we will explain how you can record everything for both your educational and promotional content in one workflow. By the end, you should understand:

- The three steps to social media success.
- The social media characteristics and user profiles of Facebook, Twitter, Instagram/TikTok and LinkedIn and the technical considerations for each format.
- Ideas for creating promotional content that will attract engagement with your posts.
- A use case on incorporating a social media video workflow into your educational video production.

62 by Merakist: <https://unsplash.com/photos/CNbRsQj8mHQ>.

8.1 Identify clear advertising goals

We live in an age described by some as the next technocratic step onward from the industrial revolution, and social media lies at the forefront of this era (Anderson, 2012, p. 17). Posts and tweets without videos are seen by fewer people. According to Amhad (2019):

- Video is the best performing content type on Facebook.
- Tweets with video see 10x more engagement than those without - and Promoted Tweets with videos save more than 50% on cost-per-engagement.
- LinkedIn users are 20x more likely to share a video on the platform than any other type of post.

What can you use your social media promotional video to do? According to Lumen Learning there are three primary advertising objectives: inform, persuade, and remind.⁶³

- **Informative Advertising** creates awareness of brands, products, services, and ideas. It announces new products and programs and can educate people about the attributes and benefits of new or established products.
- **Persuasive Advertising** tries to convince customers that a company's services or products are the best. Its goal is to influence consumers to act and switch brands, try a new product, or remain loyal to a current brand.
- **Reminder Advertising** reminds people about the need for a product or service, or the features and benefits it will provide when they purchase promptly.

These three are not mutually exclusive goals, and content can be repurposed if you do the planning work. For instance, you can post a video advertising a sign-up link for an upcoming online training week in advance, then reuse the same video three days before the event as a start time reminder and advertise the few remaining spots that are going fast (they are probably not going fast but creating a sense of urgency is a common advertising tactic). However, to repurpose the same video for different goals requires you use a script that does not lock you into any one type of advertising.

Once you have listed your explicit goal(s) for the way(s) in which you want to (re)use your social media promotional materials, you can determine how to achieve those goals given the various types of social media platforms. In the next section, we move from clarifying your overall goals to planning out great content.

8.2 Designing social media promotional videos: work smarter, not harder

Social media is at the forefront of any modern online communications strategy, and 'success' in the online competition for attention and clicks is achieved through strategic planning that maximizes your capabilities and resources. Achieving a high degree of 'engagement' (the metric used to describe and track how many people watch or interact) with your content means not only understanding the social media platform options or their algorithmic social media patterns, but also determining whether the platform has a large, targeted community that will see your promotional video, and if so, to match your online engagement goals with the platform's dynamics. The three steps to social media success can be summed up as ensuring you:

- Upload content on platforms that reach your target audience.
- Know there are unique social media platform specifications and restrictions that make repurposing video content an inefficient strategy.
- Identifying all clear calls to action you want a viewer to take after watching the promo.

⁶³ Lumen. "Reading: Advertising." <https://courses.lumenlearning.com/clinton-marketing/chapter/reading-advertising/>. Accessed 12 September 2020.

8.2.1 Reach your target audience

Reaching your target audience means knowing who and where they are. Increasingly there are generational divides in social media use, so if your content is aimed at early or mid-career academics, you are more likely to find them in a Facebook group than on TikTok. If, however, you want to advertise an online lecture aimed at undergraduates and new post-doctoral students, then creating promotional materials for Instagram or Tiktok could significantly widen your reach. We go into further detail on five social media platforms below. Once you are familiar with your social media options, working up an extra storyboard scene for recording a Twitter ad or a Facebook video is a small investment in terms of time, but will have big payoff in terms of engagement.

8.2.2 Unique social media platform specifications and restrictions

Optimizing your content based on your intended social media platforms, should be factored into content creation planning from the start of the workflow. Knowing a platform's unique restrictions or quirks should be taken into account before you record your promotional content, not after. For example, you cannot create a 1:30 minute Twitter promo video, then simply copy the video across to Instagram. You'd quickly learn that videos posted to the main Instagram feed are limited to 60 seconds. Of course, this situation is not be entirely unworkable - many people do upload videos to Instagram in "parts" - however, it is more efficient to plan and produce a single, succinct, multi-platform compatible video, optimized for all your intended social media platforms.

8.2.3 Identifying all clear calls to action

The final thing is to make clear in your social media promo video script is: what should the video persuade people to do? Whether you want people to watch a video, attend a conference or sign-up for a webinar, the calls to action in your social media post form the 'foundation' of your promotional video 'building'. Calls to action are the vanishing point from which your promotional project will take its form. For example, when advertising a new educational video series, your secondary goal may be to reach a certain number of likes or follows. Adding a simple pop-up animation reminding people to follow and share at the bottom of the screen can save you the work of creating a second video by 'stacking' on top of your primary goal of driving people to your new video series.

Alternatively, a voice over that plays in the video's closing seconds over music, reminding people to like and share your content, or to click a link that directs them to a website, product or webinar, further reinforces this message. To achieve this, the promotional video content should be scripted and visualized in the storyboard section (Chapter 3) to center around the link's intended home. For example, for the Twitter post format, the link will be shown above the video, but on Facebook it can also be on the right of the viewer's screen. A precise number for your social media goals is key to hitting the frequency you will need for success on these platforms.

Where this verbal and visual request goes in the script will vary depending on your goals, and accomplishing this goal need not be complicated or time consuming. Let's say your goal is to increase your social media followers or subscribers on that platform by one thousand subscribers. To reach a specific goal by a specific date, an effective video should include someone asking viewers to "subscribe to" or "follow" by clicking a button to follow your institution on that platform. Other engagement actions can include giving your content a "like, share, or comment," getting viewers to click on a YouTube video link or a webinar sign-up link, or on a link to become a conference attendant.

Now that you have clarified your target audience, know that platforms have different requirements, and identified the concrete actions you want people to take after watching your video, the next section provides you with a more detailed grounding in social media video promotion.

8.3 Four Social Media Metrics

Below we provide an overview, guided by four metrics for social media advertising for five popular social media platforms: Facebook, Twitter, Instagram/TikTok, and LinkedIn. Then we provide tips on making eye-catching social media videos in relation to the technical considerations you'll need to know. Finally, we present a use case to demonstrate a sample workflow incorporating a social media promotional strategy into a storyboard and script writing workflow.

We can use four basic elements to help us understand the workings of each platform that we have at our disposal (current at time of writing in 2021).

- 1) Targeting – who uses the platform.
- 2) Reach – how many people see your content.
- 3) Frequency – how many times your promotional materials are seen.
- 4) Impact – creating content that converts views to clicks.

Targeting – The audience you intend the product or service for, and the areas of social media which this demographic typically frequents. This is largely a matter of advertising efficiency, and identifying your intended audience makes it more likely you will find ways to advertise to them. A video advertising a new GDPR lecture to the general public is unlikely to get attention, whereas a targeted audience will sit up and take note. As an example, your Facebook targeting will include obtaining membership and permission to advertise in groups that mention Big Data in their community names.

Reach – Reach is the amount of engagement your social media post is likely to receive on the host platform. It can also mean the tactical consideration for where your largest audiences can be found. Reach can also refer to the methods used to increase the number of times your video will be seen tailored to the algorithm of each social media platform. As an example, by posting in Facebook Big Data groups you know that you can reach up to 15,000 people worldwide (this is not the real number, just an example).

Frequency – The frequency with which an audience sees your message will determine the likelihood of their listening to and engaging with that message. This is a basic rule of advertising: people know the Nike tick not because it made some fascinating one-time appearance in their lives but because the advertising is repetitive, hitting you with frequency again and again, working to drive up sales. The same basic principle applies here. For example, you decide to advertise your upcoming webinar in each Big Data Facebook group four times in the two weeks leading up the event, at different times so as to catch people in different time zones.

Impact – Impact refers to the manner in which video engagement success is best achieved on each of these platforms. This will depend largely on your intended goals. You must optimize your videos for the engagement formats available on each platform in order to succeed. This means knowing the language and culture, as well as the technical optimization tools, for each platform. You can learn a lot simply from your own engagement with other content on the platform, and adapting their successful language and/or calls to actions for your own purposes.

8.4 Facebook

Targeting – Facebook's community has the largest number of people over the age of 45 of any of the platforms we list here. Although Facebook has incorporated more modern communication modes that worked well on its other platforms (such as the "stories" function from Instagram) Facebook's strengths lie in its traditional model, where comments, likes, shares, and views on a post push it up the newsfeeds of other people's friends when they engage with it. Facebook offers tight-knit communities who share information that they think may be helpful, relevant, amusing, or shocking to friends and family. Facebook videos have an option to add five tags. You should make these keywords broad enough to capture a wide audience, but targeted enough to hit your audience, so as few views as possible are wasted on people unlikely to engage with the content any further.

Reach – If your organization has a business page on Facebook, or it has a group page, you will already know that reach on Facebook is built up over time and through engagement with other people and pages. Facebook pages are powerful tools for sharing videos, and if you or your organization has a Facebook page, these should be taken advantage of to build up your page following. One of the unique features on Facebook is the “invite” function that allows you to grow your audience. For example, if John Smith were to like a post on the fictional Big Data Fan Page, I can click on the post to see who liked it, and upon seeing John’s name, I would be offered the option to “invite” him to like the page. Doing this would send him the notification “Big Data Fans invited you to like their page” plus a link to allow him to like the page from inside his notifications. Consistently sharing content on Facebook matters: the more often a post from “Big Data Fans” page is shared, the more opportunities you have to send people like John an invite and help to form a community. This has a snowball effect, but even as your page grows and engagement increases, you should look to optimize posts for sharing. The best method to increase your Facebook engagement and your Facebook group page is to find other pages with similar ideals and goals and focus on community building. Comment on those posts you think are interesting, and you are likely to see the engagement favor returned. If you can persuade the page to follow you, they may share your content, and increase your reach even further the next time you post a video. There is also no shame in simply messaging a page owner and asking them to check out your content or share your content with their audience. It will often be appreciated if your video features experts in the field.

Other types of engagement on Facebook include comments, likes, and views, which should all be optimized, paying particular attention to the comments section. Likes and views will push your video up in the algorithm and increase its chances of being seen, while optimizing your video for discussion (e.g., by including questions and asking viewers to post their thoughts below) will generate comments and discussion around the subject. As this engagement snowballs in the comments underneath your post is exposes to more users. There is an option to pay for Facebook to advertise your content, which could also be an effective, if more expensive, way to build your audience. The benefit of direct payments to increase your reach is that Facebook does the targeting for you. You will be asked which age groups and demographics you intend to target, and what interests these people have. For particular events or video content you may want to experiment with buying ads if you need to meet a certain participant threshold or view count.

Frequency Posting – Frequency on Facebook is worth consideration, as the chances of engagement with a post increase the more time it appears in people’s feeds. This will determine how widely the video is seen and shared and where your audience exists, globally. A simple but effective way to increase viewing frequency is to share the post repeatedly back to your page. Do not, of course, do this every hour as you are likely to irritate people in your community. However, your content is potentially of international interest and you need to share across time zones. There is nothing wrong with sharing a post once in the morning hours and again in the afternoon or evening hours over a period of three days after publication to boost engagement.

Another option is to share the video post inside your page in pre-existing Facebook communities inside Facebook groups. Be careful to check the group rules first (you may be immediately banned for spamming or self-promotion if there are rules against this) but this can increase both the reach and the frequency with which your posts are seen.

Impact – Your impact strategy should guide your promotional video content, mostly to do with making the video stand out to the audience with whom you want to engage. Impact is heavily tied to targeting; in the context of Facebook this means shaping the video’s content and language to your intended audience. If you include a call to action based on clicking a link, make sure your script reflects the fact that on Twitter and Facebook links and descriptions will be above your video, but on Instagram and TikTok they will be below; adjust your script, subtitles and calls to actions accordingly (or use vague language such as ‘click on the link provided’).

Technical notes – Facebook allows file sizes up to 10 GB and videos must be less than 240 minutes long. Video ratios are generally a non-issue, with all aspects between 9:16 and 16:9 supported.

8.5 Twitter

Targeting – Twitter gets high engagement with many different communities. The audiences are typically younger than those on Facebook, but older than those on Instagram and TikTok. Unlike Facebook, however, Twitter is largely about staying current with breaking news and events, and using hashtags to connect with communities. There are professional communities of almost every type on Twitter. You can easily engage with these groups by targeting your short videos messaging to these audiences.

Directly engage with other Twitter accounts that might retweet your content by sending a private, direct messages (DMs), replying to one of their tweets, or using the “@” function on tweets. This doesn’t guarantee they will engage with your video but increases the chances of it reaching the right audiences on Twitter.

Reach – Reach on Twitter is achieved through the use of #hashtags and trending topics. The power of Twitter is the speed at which new information can be shared and updated (this should also factor into targeting for videos you put out on Twitter). Informational threads – that is to say, multi-part tweets on a topic – by experts in fields are popular on Twitter, and may help boost your account following. However, your Twitter reach will not just depend upon video optimization, but also on your engagement in your targeted communities.

If you stick with the Big Data theme, look up the hashtags #bigdata #bigdataanalytics #datascience #datascientist, and see what comes up. You can sort the results by popularity to see what is popular on Twitter, find new hashtags included by users in the big data community, and increase your chances of getting retweets on your videos. Another way to expand your reach is to reply to, or retweet other people’s posts with positive comments and add your videos. Networking is as much a part of social media as it is for general success in business.

Frequency – Where possible, try to increase the frequency your videos are viewed by posting content around a specific theme and using consistent hashtags as often as possible. Like Facebook, Twitter also provides a function whereby you can share (or retweet in this case) your content multiple times. Take advantage of this when publishing on Twitter. The same frequency rules apply for videos and hashtags: the more often a tweet or hashtag is seen, the greater the chances that a member of the community will engage with it, retweet it or use it to sign up for the upcoming webinar on Big Data’s ethical and legal challenges.

Note: because Twitter posts are replaced by new posts at a much faster rate than Facebook, retweeting content multiple times per day is considered much more acceptable, and really does help reach targeted communities. The more times someone sees the video, the greater the chances that they will watch it, follow your account and watch future videos you post.

Impact Views, likes and retweets are easy ways to evaluate the impact of your promotional videos. Studying the communities on Twitter through popular hashtags and trends is vital to finding how to impact the communities you wish to engage with in a way that encourages them to take part in your call to action or engage with your content. Twitter videos are less suited to the 1:1 format mentioned earlier; although it can be done, it is best to take advantage of the tweet itself to create engagement above the video, as Twitter users tend to read the short description before clicking a video. This is perhaps the one piece of advice that will affect the impact of all communities on Twitter, from our experience.

Technical notes: Twitter videos are limited to 512MB and can be up to two minutes and twenty seconds long, with aspect ratios between 1:3 and 3:1 a requirement.

8.6 Instagram/TikTok

Targeting – TikTok and Instagram are unique in that you can achieve wide-scale reach and targeting without first building a large following base, and so are unique for harnessing audiences of like-minded individuals. Both platforms limit posted videos to 60 seconds and are heavily dependent on optimizing your hashtags, even more so than Twitter. Given the visual competition on these platforms, your videos must be attention-

grabbing. Keep in mind the audience targeted on these platforms will be younger; while older users do have Instagram accounts, the engagement largely consists of people under 25 and your content should be targeted to this demographic. Study the communities, common hashtags and the content layouts used by more popular accounts to engage their audience. Repurposing what already works will be important to your learning objectives and increase your likelihood of reaching your target group.

Reach – Hashtags on both platforms are tracked by algorithm websites, so you can look up the most popular subject area hashtags on Instagram, if you are starting a Big Data Instagram page, for example. People often search under their favorite Instagram hashtags to find pages they wish to connect with. Measuring the reach of your social media posts and video through the number of likes and comments on Instagram and TikTok is not comparable to Facebook or Twitter. That is because it is easier for you to get engagement on these platforms, but that also means it is easier for everyone on the platform. Keep this in mind, and don't mistake higher engagement on Instagram or TikTok with having a greater reach than Facebook or Twitter.

For example, TikTok posts videos directly and automatically to users on their feed. If viewers let the video run all the way through it boosts your view count. Of course, you are competing with everyone else who is competing for people's attention. This makes the first five to ten seconds of your video absolutely vital. In the era of miniscule attention spans, anything but something attention grabbing increases the odds of them swiping away, especially given how easy TikTok makes this. A boring video opener will cost you in terms of reach. If you can harness the TikTok algorithm to work for you, it is possible to get thousands of video views. Keep up to date on relevant hashtags and trends. Also, stay open to the ways that TikTok's algorithm is structured: if you use music ("sounds" on TikTok) from another popular video, the algorithm is more likely to show it to the (possibly millions of) viewers who engaged with that popular video. You can even "duet" the video or "react" to it on your own feed, increasing the chances of people interested in your content finding you.

Frequency – Both Instagram and Tik Tock are optimized for short, sharp posts that cut right to the point of whatever you're trying to say. Ideally, your videos on these platforms should be between ten and thirty seconds and always include a call to action; whether that is to follow your account, click a link to a webinar, or to visit a website where they can learn more about the topic. Humor or shock is often a vital element to engagement on these platforms, although this must, of course be balanced with professionalism.

Once the style of your videos and posts are optimized, you can post frequently. For instance, you can make three ten-second adverts for your Big Data webinar, rather than the single thirty-second advert format you made for Facebook or Twitter. Instagram and Tik Tock are optimized for this kind of post frequency, so take advantage of this. Discuss in your pre-production storyboard and writing phase how to film thing in such a way that you can cut a shorter clip of your Facebook/YouTube video to advertise on Instagram or TikTok (with "FULL VIDEO HERE:" in the caption or comments), and then write your script and storyboard for the Facebook/ Twitter/YouTube video with this in mind.

Impact – Like Facebook, Instagram is ideal for a 1:1 video with bold 'impact' font text in the border to engage people on the platform. On Instagram the hashtags are the most important feature and will guide people to your video. Hashtags should be tailored to their targeted audience's interests and be designed to engage with them to have the biggest impact.

TikTok is optimized for 9:16 videos, but any format will work. On TikTok, take full advantage of editing tools and features provided by TikTok itself. This includes built-in text and editing options, and these have user appeal: they convey a sense of familiarity due to the consistent look and feel of the built-in platform features. TikTok features many dance videos, and although this is the most popular type of video, videos of people talking directly to the camera are popular too. Be sure to caption your video and add a heading to engage your targeted viewers. These tactics will increase the impact of your video with your audience.

Technical Notes: Instagram – Instagram videos are limited to 4GB and can be up to 60 seconds long. TikTok – TikTok videos are limited to 287.6MB (iOS) or 72MB (Android) and can be up to 60 seconds long.

8.7 LinkedIn (Native video)

Targeting – LinkedIn uses hashtags in much the same way as Instagram or TikTok, but the reach is far smaller, as it tends to be a community of networking professionals looking to share their events or advertise their products. It has huge potential for targeting professionals but may not be ideal for recruitment of new people to the community. These videos should be attention grabbing, but in the case of LinkedIn, successful targeting is achieved through hashtags and keywords in the post: adding keywords from your subject field in the captions will help you target the right audience and increase your click-through rate. Research into and staying current with the terms and phrases used by others in your target audience will be key to posting videos that receive lots of engagement from the people you want.

As with Twitter, you can also use the @ feature to tag relevant companies or persons into the posts in LinkedIn, but be careful how frequently you do this. You want people to enjoy your content, not be confused as to why you're tagging them and have them report you for spam. Make explicit the ways in which you are offering your niche, target audience something original, timely or completely new. It matters in LinkedIn's environment.

Reach – LinkedIn provides you a deep reach into a narrow field given that it is business professionals who tend to be concentrated on the platform. Given its links to work, it is less likely your potential audience will browse this app during their leisure time, so maximize your reach by using plenty of hashtags. Also, engage with other people's posts, particularly those in your community. LinkedIn operates much like Facebook, so comments, are helpful to you in the algorithm and in expanding your reach. Online social reciprocity with other accounts over time will increase the engagement with and expand the reach of your own posts.

Frequency – LinkedIn is set up for much longer posts, with videos of up to 10 minutes allowed on the platform at a time. In terms of metrics, each video counts more in terms of impact because of the relatively smaller audience on LinkedIn compared to other platforms we have discussed. If you are unsure how to use the time, start with videos around thirty seconds long (in line with LinkedIn's own recommendations) to ensure you can hold people's attention. Post it multiple times; the relative size of LinkedIn's audience means that it will be a game of numbers. You will have to learn from experience by manipulating the frequency and targeting strategy to find an audience who will engage with your content. Through experimentation you may find a time of day that works best and then stick to it. Post on a consistent basis and engage with others' posts and content.

Impact – LinkedIn is built to host 16:9 videos or 1:1 video, with the latter being ideal for adding bright, bold captions, much like on Facebook. It's designed to mimic Facebook in its layout, and to Facebook users it should feel familiar and operate in much the same way. As previously mentioned, LinkedIn recommends videos to be 30 seconds long but videos up to a minute and a half are still acceptable. Longer form videos must tell a clear story to increase the click-through rate for each post, but in the beginning while building up your network, try to keep videos short and impactful: clear messages with clear calls to action. Filming in good lighting and using attention-drawing bright, bold text fonts will all increase the impact of your video. The use of business jargon on LinkedIn is less of a hindrance than on other platforms and may actually help increase the impact your content has with your target audiences. For measurable impact, phrase your posts wisely to drive people to click on your video or sign up for a webinar – all things that can be counted and measured as impact.

Technical notes: LinkedIn allows video sizes up to 5 GB and videos must be less than 10 minutes long, with the median running to the 3-minute mark.

8.8 Eye-catching video tips in attention-competitive environments

In an era of short attention spans, the social media platforms that are thriving tend to attract brief, visually engaging yet succinct videos. This means that your content must not only be well scripted but also visually engaging. These aesthetic considerations must be deliberate decisions made early in the pre-production stages of storyboarding your videos. Unlike your YouTube videos that are designed to be watched on a desktop screen or cast to a television, social media platform videos are most likely to be watched on a mobile phone. With a much smaller screen, how will you make your promotional video stand out?

Think of your social media videos first in terms of visuals, not content. The ideal aspect ratios for optimization vary on each platform that we have mentioned. Knowing and understanding this before you begin shooting is essential to the success of your project. Ideally, this should be incorporated into your pre-production storyboard planning phase. Your script should be written to indicate which sections of the video will be used, or recorded on its own, for smaller social media promotional clips. For example, if your plan is to post a fifteen-minute video of a new Big Data lecture on your Facebook page, your content storyboard should clearly mark the slides that could be transformed into a few interesting, self-contained two-minute excerpts for a Twitter video. The two-minute version can be uploaded in a tweet and with closed captioning (e.g., subtitles) with a link to the full 15-minute lecture on Facebook. Bright colors, an upbeat and excited tone, or a promise of a later reveal by clicking on the link provided are tactics for increasing viewer engagement with your social media posts.

Budget time in post-production to add subtitles to your promotional video. All the platforms we mentioned above include an auto-play feature for videos, this means including subtitles considerably increases the impact of your video. Subtitles can grab the attention of someone scrolling through their feed, induce them to unmute your video, and pull them into the conversation, thereby moving them from being impacted by your content to engaging with your content. Adding subtitles is also an accessibility issue, they expand your impact to those with hearing disabilities or make it easier for non-native speakers to follow the video content. As a general practice, hand-entering subtitles wherever possible adds value to the content.

Given all these details and technical considerations, in closing we would like to remind you to keep the bigger picture in mind. Storyboard, and write for the final edit. Storyboard and record your video based on the platform formats with an eye to the vanishing point; that is, the stated goal or call to action which is the motivating force driving your video creation. Always keep in mind that in an era of short attention spans, getting right to the point is essential for engagement.

9.9 A social media use case

Let us suppose you want to promote a sample of your recently uploaded online lecture on Big Data tools and modern data collection methods. Your aim is to upload a sample lecture to Facebook to help advertise your video and reach a larger audience than your YouTube subscribers. You also know that cross platform communication is vital to reach larger audiences, so you intend to post smaller promotional clips to Twitter and LinkedIn. How can you work smarter not harder, to create promotional videos?

Include social media in your storyboarding, scripting and shot schedule. Ask your expert for their lecture slides and use them to construct a storyboard for the full lecture and identify ahead of time those sections that may be converted easily into stand-alone video advertisements. Carefully consider each platforms' style and what is required for you to create an engaging, impactful post for your chosen platforms.

In the first attempt to storyboard your video, include notes as to what look, information and/or aesthetics you want for your promotional video, even if only in vague outlines. On your storyboard notes, prominently list the video dimensions best suited for each of your intended platforms. On Twitter, LinkedIn, and Facebook

(with the latter as the focus) 1:1 aspect ratio is ideal. You know, therefore, even before you start, you will need to shoot your main video in 16:9 but framed in such a way that you can easily convert it to 1:1 dimension in your chosen video editor without losing important visuals. As the project develops you can triangulate your social media goals with your developing script or the lecture slides and write or identify attention-grabbing monologues.

Emphasize to your expert that the first minute or two of their talk should be focused and highly scripted so it can later be edited into a promo video suitable for LinkedIn and Twitter. Imagine how each individual lecture section could be edited to sound like its own promotional clip and shoot for the edit as such. If possible, work with your expert on wording their lecture opening lines that include your chosen call to action (e.g., 'This lecture will be posted to the CESSDA Training YouTube channel, feel free to watch it again by visiting their YouTube page'). This is especially necessary if they are not using a script but are giving an extemporaneous lecture from their notes. Alternatively, or if they forget their lines on the day, get a .mp3 voice-over recording of their lines that you can use later. Do not forget to spend time in media training with your expert, reminding them to pause for a breath between slides or sections of their talk, and to speak slowly and clearly, so that your footage of them is optimized for editing. With these efficiencies, you can increase your video-posting frequency by making several promotional clips from the same footage of your exemplar mini-lecture.

Take this footage, edit in post-production with whatever visuals and animations you envisaged at your storyboarding stage, but the very first thing you must do is adjust the aspect ratio to fit it to your platform. In this case you will want a 1:1 aspect ratio, which should create a black border above and below, where an attention-grabbing caption that will pique the interest of your target audience can be placed. Edit the footage and remove any pauses so that it all flows nicely, with the animations coming in at the right moment for the words spoken at the time. Visuals should be fairly frequent as they will help hold the audience's attention but may also be an aide in visualizing what you are saying to make it more engaging, and therefore have a greater impact on Facebook, Twitter, and LinkedIn. When you are happy with it, save a copy of the project and then render it in 720p quality or above.

Once rendered, save the footage to your computer or device, and go to the platforms you intend to upload to. Start with Facebook: in this case, we want to upload to our page on Big Data, simply called "The Big Data Page", so we will upload and choose five keywords as tags which will help drive audiences to your video and make sure we are targeting this audience well. Title your video with the name of the lecture series and provide a link if one is required and this is scripted into your video at the beginning or end. Make sure the caption is relevant, uses keywords, and will grab the attention of the target demographic of the lecture. On these chosen platforms, this is likely to be young and middle-aged professionals looking into careers in data or using data for business purposes.

Generate some captions at this stage if you prefer and upload the finished product to your Facebook page at (for example) midday in your current time zone, ready to repost at 3PM and again at 6PM on Facebook.

As soon as you have posted, like the post from your personal Facebook page or have a friend do that for you to help you in the algorithm. Then go to a relevant group, such as the "Information Technology Learners" group on Facebook and share your post into that group. This will count not only as a share, but also as driving traffic towards your video and boosting engagement. Anybody who likes the post can be invited to like your page, and this will allow you to grow and cultivate a relevant audience. Respond to comments and ask people questions. This will keep people engaging and help you in the algorithm.

Go back to your video editor and edit the video down to the minute you want to upload to LinkedIn and Twitter. Perhaps you might add text at the end that says, "See the Full Sample Lecture on Facebook." Once you have this, repeat the rendering process.

Upload to Twitter, providing a link to the relevant places, including the larger Facebook lecture. Utilize the hashtags particular to data groups and tag some data-based Twitter accounts which may take an interest in your video. Tweet this, and then retweet it every hour or so for the rest of the day to maximize its reach. You could even copy the link and quote tweet it in response to relevant popular tweets on big data projects. Ask

people with larger accounts if they can retweet it via Direct Messages, and always do this politely and be very courteous. Every ally in your field on a platform is a useful asset that you can ill afford to lose for the future. Finally, upload to LinkedIn, providing the links once again, and using keywords and hashtags as well as the @ mentions feature to drive interested parties to your page who may be able to generate more engagement. Share this when you share the Facebook post once again and try to manage all of this in promotional terms for at least the following six hours, with an emphasis on the targeting, reach, frequency, and impact of your intended message and call to action.

Using the tips provided in this handbook, on the day of the lecture you will film the Big Data lecture with careful consideration for your future target audience, record the right call to action for the promo videos, achieve the look or aesthetic for the promotional video that you want, and be confident you have the .mp4 file flexibility that meets the specific technical constraints and considerations for video uploads to Twitter, Facebook, and LinkedIn.

8.10 Add subtitles to grab people's attention

The ideal font for this is Impact (available on most editors), as it stands out more than any other font on social media, and either a white color or a bright orange sets against the black border are most attention grabbing. This can be done on most video editing software or apps. The Powerdirector app, for example, asks you to choose a format when you start the editing project.

Adding subtitles can take time but does draw more attention to what is being said, particularly as the video will likely appear muted to your audience, although this applies to all of the following platforms to help increase impact, with the notable exception of TikTok.

8.11 Final tips to make your videos stand out

- Engage with the culture of the platform to learn the dynamics.
- Make your videos bright and bold.
- Use titles and thumbnail images which act as clickbait for the audience.
- Variation on the individual video level is good, even while frequency of message is essential on the macro-level.
- Don't be afraid to post the same video multiple times: sometimes videos take off at certain times but not at others.

8.12 Conclusion

In this chapter you have learned about social media's various challenges and how to start to effectively utilize the algorithm and the demographics that you will find on these different platforms. To confirm you understood the main points of this section and to reinforce your understanding, take a moment to answer each of these questions, highlight the answer in the text above, or write out one or two sentence answers.

- What are the four fundamental tools we use to build a good social media strategy?
- What aspect ratio works best with TikTok?
- What is the maximum file size on LinkedIn?
- What is the maximum video length on Twitter?
- Tweets with video see how many more x engagement than those without?
- Which Social Media platforms typically have the youngest audience?

9. YouTube's Copyright License Options



Image: "CC BY License Image" ⁶⁴

Creative Commons (CC) licenses are used by creators who want their work to be used and shared by others, but with specific conditions attached enforceable under the law. CC licenses use copyright laws to empower a creator to control how their work is used, giving others legal permission to freely reuse the work, but with certain conditions. By the end of this chapter you should understand:

- your license options
- how to cite others' Creative Commons works
- advice on licensing promotional materials.

9.1 Your two YouTube license choices

YouTube offers you only two copyright licensing options for your videos: a Standard YouTube Video License and a Creative Commons – Attribution License. The Standard YouTube license is an 'All Rights Reserved' copyright license, which sets out the provisions for YouTube to display your content, and for viewers to watch your content. Applying an All Rights Reserved license means that your content may be viewed on YouTube, but it forbids anyone from downloading, adapting, and redistributing your work without your permission, except for under the fair use or fair dealing defenses.

Your other option is the Creative Commons, CC BY license. You may select the CC BY license when your video complies with the following conditions:

- consist entirely of original content created by you; and/or
- any reused or adapted works it includes are published under a CC BY license, and/or under a public domain mark.

9.1.1 What CC-BY means

Although moral rights in many countries require a creator is properly attributed, not all countries do. However, all CC licenses require creator attribution. This means citing the author and giving other information such as where the original work can be found. The CC-BY is the least restrictive license available. Users must provide attribution. It does not restrict what can be done with the work itself. Applying a CC BY license to your video indicates that, on the condition of creator attribution, anyone may copy and redistribute your content in any medium or format and/or remix, transform, or build upon your content for any purpose, even commercially.⁶⁵

⁶⁴ 'CC BY Logo' by creativecommons.org is licensed under a CC BY license. Original version at creativecommons.org/about/downloads/.

⁶⁵ For more information visit the website: <https://creativecommons.org/licenses/by/4.0/>.

9.2 Citing others' Creative Commons works

You may want to incorporate other CC licensed works in your educational videos, and to comply with the BY requirement of all CC licenses, you need to provide attribution. What information must you provide when citing a work? Where should the information go? In the video or in the video description? There isn't a right answer, only what is right for your situation and planned uses. Providing this information ensures you met the legal requirements for attribution. Properly cite a CC licensed work by recalling the acronym TASL:

T – Title of the work.

A – Author of the work (which may be different from the CC license holder).

S – List the source and provide a link to the original materials.

L – Specify the license (link to the CC license deed).

As an example, here is the TASL information for “A Day in the Life of a Data Archivist”.⁶⁶

“A Day in the Life of a Data Archivist”, by CESSDA. Available at: <https://youtu.be/7gwQ5i7B34>. CC-BY.

9.3 Should I put my credits in the YouTube description box?

Probably. It is a more flexible option than adding them in the video itself. If you list the credits as text in your YouTube video description box you can also add hyperlinks. Later, if the online location of a work changes, or a different version is made available, you can keep your content up to date with new links. A disadvantage to this method is that those who embed or reuse the video may not see the attribution. The author uses the description box to credit works and provide link addresses in case I need to correct or update the information in the future.

9.4 Should I add licenses my promotional videos?

Your promotional materials will most likely not be reused in substantive ways not already allowed under fair use or fair dealing. Unless you have a particular reason for wanting to license your promotional materials under a CC-BY license, it is fine to use the standard YouTube license.

If it is important to you that people know your educational materials are CC-BY licensed, **I recommend you add information on the license in the last scene.**⁶⁷

9.5 What have you learned?

In this chapter you've learned how copyright laws and creative commons licenses apply to video content you publish on YouTube. To confirm you understood the main points, take a moment to answer each of these questions, highlight the answer in the text above, or write out one or two sentence answers.

- Which two licenses does YouTube offer?
- What does each letter in the acronym TASL stand for?

⁶⁶ Video by “CESSDA” (2020), “Attribution 4.0 International — CC BY 4.0” (2020): “A Day in the Life of a Data Archivist” (2020) <https://youtu.be/7gvvQ5i7B34>

⁶⁷ You can download CC license icons for your use at the creative commons website: “Downloads” (2020) creativecommons.org/about/downloads.

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Appendices

Appendix A: Sample Storyboard

Create your own at [Storyboard That](#)

Appendix B: Sample Script

Video 1: A DAY IN THE LIFE OF A CESSDA DATA ARCHIVIST

SCRIPT BY: SONJA BEZJAK, SERGEJA MASTEN, KRISTI WINTERS, PAULA SCHÄFER

Logline: Brief (approx. 3 minutes) and visually engaging instructional video that explains what a data archivist is, what they do, and why their work is so important for the future.

Synopsis: This video will use RECORDED IMAGES GO HERE, along with CLIP ART AND SCREENSHOTS GO HERE, KEY CONCEPTS IN DATA PRESERVATION, and HOW ARCHIVISTS PROCESS AND PRESERVE THE DATA THEY RECEIVE.

By the end of the video, users should understand:

- DIVERSITY OF DATA, ORIGIN OF DATA, VALUE OF DATA
- FAIR DATA: SOC SCIENTISTS TO MAKE DATA FINDABLE, WITH CERTAIN PROTECTIONS
- A ROLE OF DATA ARCHIVIST IN DIGITAL ERA
- THE PROCESS OF SELECTION, DEPOSITION, PRESERVATION AND PUBLISHING OF RESEARCH DATA

Voice over: Kristi Winters

Directed, edited and produced by: Kristi Winters (GESIS)

Executive producer: CESSDA

Scene 1: FADE INTO CESSDA BRANDING CLIP (5 SEC)

Scene 2: FADE TO <https://www.pexels.com/photo/abstract-art-blur-bright-373543/> (This first link was left in as an example, the rest have been removed).

VOICE OVER:

In the digital age, it could be said we are drowning in data. We've gone from kilobytes and megabytes to terabytes and petabytes.

Scenes 3: Images of protests, migration, NGOs (in order with voice over): RELEVANT LINKS LISTED HERE

VOICE OVER:

These data are of enormous potential value and use to social sciences and humanity researchers on issues from human rights, environment, migrations, ageing to ethnical minorities. Research data can contribute to governmental and civil society organizations, political decision makers, journalists and citizen scientists in raising awareness and quality of life.

Scene 4 First paragraph: RELEVANT LINK LISTED HERE Second paragraph: image of data archivist and popping questions with text “accessible?”, “formats?”, “data use?”. Paragraph three: zoom in the image of data archivist

VOICE OVER:

Despite this huge potential of research data, there are still barriers, preventing data to be archived, published and reused by others.

Who helps in processing these data for storage and makes them accessible? Who makes sure the data are in formats ready-made for researchers so they can understand the data and use them effectively? The answer is a data archivist.

Scene 5: Paragraph 1: image of a person standing on the map RELEVANT LINKS LISTED HERE

Paragraph 2: zoom in each part of f-a-i-r (from DMEG)/show FAIR from left to right: RELEVANT LINK LISTED HERE

Paragraph 3: images from DMEG, popping up, maybe around the image of data archivist? RELEVANT LINK LISTED HERE (ethical review image)

VOICE OVER:

Data archivists ensure all these data and their supporting materials are prepared in a way that researchers worldwide can access and use archived datasets NOW and in the future. In this regard, CESSDA research data archivists support FAIR principles, which means they support researchers in making their data easily findable, accessible, interoperable and reusable to all around the world.

To do this, it's the job of the data archivist to:

- review the data to make sure they meet quality standards and legal and ethical requirements
- add metadata, which means key search term information about the study and its contents, so the study itself can be found in search engines
- make sure supporting materials, like the questionnaire, with its exact wording for the questions and responses, are included and easy to find
- and prepare data and other materials in formats for a long-term use.

Pre-set protocol is a safe path to archive and publish the data.

Scene 6: Data archivist in the center and then popping up logos of licenses?

RELEVANT LINKS LISTED HERE (second image)

VOICE OVER:

For this purpose, data archivists help researchers with licensing their data, for instance with Creative Commons licences, such as CC0, CCBY or CCBYNC. For archived data to count as a publication, it should follow a similar publication process to an article and should be properly documented with metadata, reviewed for quality, searchable and discoverable in catalogues (or databases) and citable in publications. After that, data can be published and available for secondary users!

Scene 7

First image: RELEVANT LINKS LISTED HERE RELEVANT LINK LISTED HERE. Images of data catalogues, covering one another: RELEVANT LINKS LISTED HERE

VOICE OVER:

If you have questions about how to find suitable data for your research purposes or questions, related to the quality and usefulness of data for secondary analysis, do not hesitate to ask experts in data archives. CESSDA experts can recommend you data sets for selected research topics or advise you on different types of data. They can guide you through access to data and help you with data citation. In a digital era, when we are drowning in data, remember that there are trustworthy data archives and data archivists who store data and help researchers in finding the best solutions. Data archivists help to create a friendly, democratic scientific community and support scientific development.

Scene 8:

CROSS FADE TO CESSDA OUTRO CLIP

VOICE OVER:

For more information please visit cessda.eu

FADE TO BLACK

Appendix C: Sample Shot Schedule

<i>Date</i>	<i>Shot No.</i>	<i>Location</i>	<i>Crew</i>	<i>Equipment</i>	<i>Props/Costume</i>	<i>Time In</i>	<i>Time Out</i>	<i>Editing</i>
10/4/12	1	House	Forensic	Camera, Tripod, Shooting Schedule and Storyboard	Gloves + White Jacket	Late Evening	Night	2 Seconds
10/4/12	2	House	Killer	Camera, Tripod, Shooting Schedule and Storyboard	Bloody Mask	Late Evening	Night	1 Seconds
10/4/12	3	House	Killer	Camera, Tripod, Shooting Schedule and Storyboard	Bloody Mask	Late Evening	Night	1 Seconds
10/4/12	4	House	Forensic	Camera, Tripod, Shooting Schedule and Storyboard	Broken Glass, Knife, Blood + Torch	Late Evening	Night	2 Seconds
10/4/12	5	House	-	Camera, Tripod, Shooting Schedule and Storyboard	Broken Glass, Knife	Late Evening	Night	2 Seconds
10/4/12	6	House	Rebecca	Camera, Tripod, Shooting Schedule and Storyboard	Blood and her casual day –to-day clothes	Late Evening	Night	1 Seconds
10/4/12	7	House	-	Camera, Tripod, Shooting Schedule and Storyboard	House, intertitles fade into this.	Late Evening	Night	2 Seconds
10/4/12	8	House	Rebecca + Forensic	Camera, Tripod, Shooting Schedule and Storyboard	Camera – takes an image of Rebecca ‘dead’	Late Evening	Night	2 Seconds
10/4/12	9	House	Rebecca	Camera, Tripod, Shooting Schedule and Storyboard	Blood	Late Evening	Night	1 Seconds
10/4/12	10	House	Rebecca	Camera, Tripod, Shooting Schedule and Storyboard	Running up stairs – camera – top step	Late Evening	Night	2 Seconds
10/4/12	11	House	Killer	Camera, Tripod, Shooting Schedule and Storyboard	Bedroom door – his mask and big hooded jacket	Late Evening	Night	1 Seconds

Shooting schedule by maltaz ⁶⁸

68 Shooting Schedule Maker by Maltaz. https://www.slideshare.net/maltaz?utm_campaign=profiletracking&utm_medium=sssite&utm_source=ssslideview Accessed June 2021.

Appendix D: Pre-Production Checklist

- ___ Review storyboard, list of resources/equipment needed
- ___ List assets you have and assets you need (e.g. lights)
- ___ Organize storage with sufficient space for large video and audio files
- ___ *Screen captures* – test software/website, rehearse video and audio recording
- ___ *Animation* – search for and collect images (and sources) into images folder
- ___ *On location(s) scouting* – make notes about equipment and power needs
- ___ Book a time and location (book a separate rehearsal day ONLY if needed)
- ___ Book time for set building, multiple takes, and set removal
- ___ Write a checklist of all the equipment needed on set, print it out
- ___ Print out copies of the shot schedule, storyboards, and script
- ___ Cross-check the equipment you packed vs the equipment list before leaving

Appendix E: Equipment Checklist for SERISS Project (Sample)

Cameras

- 1 Huawei Pro 30
- 1 Samsung Galaxy S8+

Tripods

- 1 Manfrotto
- 1 Rollei

Lights

- 2 Ikea lights
- 2 LED lights
- 3 LED 5m strip lights and cake pans
- 3 soft light boxes
- 1 diffusion crepe paper

Audio

- 2 iRig lav mics
- 1 Boom mic
- 1 Boom pole w soft covering
- 1 Noise cancelling headphones
- 2 TRRS extension leads
- 2 TRS extension leads

Stands

- 3 Light stand (black)

Backgrounds

- 2 grey pin boards

Appendix F: Audio Recording Technical Information and Equipment Checklist

File type

___ Record and edit audio files in .wav

___ Export and store audio files in .mp3

Optimize your sound quality, control

___ background sounds, the noises from outside your recording space

___ room tone, the way the room you record in shapes the sound being recorded

___ plosives or wind noise

Recording into a computer, equipment list

___ a quiet location

___ USB microphone installed (default audio input) microphone stand, pop filter

___ sound-absorbing fabrics placed around the microphone (if possible)

___ audio recording software

Recording into a mobile phone (or external audio recorder), equipment list

___ a quiet location

___ mobile phone (one per audio input) with an audio recording app

___ lavalier microphone for the main audio

___ TRRS extension cords, if needed

___ a boom, boom mic or shotgun microphone (wind filter if needed)

___ (if possible) sound-absorbing fabrics to reduce background noise and room echo

Appendix G: Sample Video Metadata Tracking (SERISS Project)

Title	Video Description	Metadata tags	Video url	Playlist Title
SERISS Tools - Translation Management Tool	Maurice Martens discusses The Translation Management Tool. The SERISS Consortium CC-BY, 2019	SERISS, SERISS Tools, Translation Management Tool		SERISS Data Management Tools and Websites (Suggested)
SERISS Tools - Fieldwork Monitoring System	Sarah Butt and Iggy van der Wielen discuss the Fieldwork Monitoring System. The SERISS Consortium CC-BY, 2019	SERISS, SERISS Tools, Fieldwork Monitoring System		
SERISS Tools - Question Variable Database	Benjamin Beuster discusses the Question Variable Database. The SERISS Consortium CC-BY, 2019	SERISS, SERISS Tools, Question Variable Database		
SERISS Tools - Questionnaire Data Documentation Tool	Hilde Orten and Stig Norlan discuss the Questionnaire Data Documentation Tool. The SERISS Consortium CC-BY, 2019	SERISS, SERISS Tools, Questionnaire Data Documentation Tool		
SERISS Tools - Survey Management Program/My EVS	Angelica Maineri and Masoud Davari discuss My EVS. The SERISS Consortium CC-BY, 2019	SERISS, SERISS Tools, Survey Management Program, My EVS		
SERISS Website -surveycodings.org	Kea Tijdens and Maurice Martens discuss surveycodings.org. The SERISS Consortium CC-BY, 2019	SERISS, SERISS Tools, surveycodings.org		
SERISS Talks - Fieldwork Monitoring System	Iggy van der Wielen explains the Fieldwork Monitoring System. The SERISS Consortium CC-BY, 2019	SERISS, Fieldwork Monitoring		SERISS Lecture Series (Suggested)
SERISS Talks - surveycodings.org	Maurice Martens explains how to use surveycodings.org. The SERISS Consortium CC-BY, 2019	SERISS, Measuring Education, surveycodings.org		

SERISS Talks - Education and surveycodings.org	Silke Schneider explains the complications in measuring education internationally and the website surveycodings.org. The SERISS Consortium CC-BY 2019.	SERISS, Measuring Education, surveycodings.org		
SERISS Talks - Measuring institutionalized populations	Jan-Lucas Schanze discusses his work measuring institutionalized populations in SERISS Work Package 2. The SERISS Consortuim CC-BY, 2019	SERISS, Institutionalized populations, survey sampling		
SERISS Talks - Translation Wording Experiment	Brita Dorner and Lydia Repke discuss their experimental research into questionnaire translations in international surveys in Work Package 3. The SERISS Consortuim CC-BY, 2019	SERISS, questionnaire translation, translation experiment		

Appendix H: Webinar Checklist

Plan out your webinar

- Develop a basic plan *e.g. the topic, duration, outline of the session, speaker or speakers, and options for audience interaction.*
- Select webinar software (if not predetermined).
- Consider how to implement plan in the specific webinar software.
- Get information needed to set-up a webinar
- Title and description *Consider the following: Is it clear it is a webinar? Is the title too long? Is the duration of the webinar clear? Do you need to indicate level of knowledge expertise and any prior knowledge needed?*
- Date and time: *is everyone also available the 30-60 minutes before the start time?*
- Questions for registration form.
- Questions for evaluation form (can be added later if needed).
- Speaker names and email.

Schedule webinar, get link for registration and promotional material

- Schedule the webinar in the software.
- Get registration link.
- Set-up event page if using and include link to register.
- Prepare promotional text for emails and news items and tweets.

Plan webinar arrangement

- Plan for facilitating the webinar *i.e. who uses main webinar controls.*
- Organise your webinar set-up *i.e. a quiet location and suitable equipment (avoid using inbuilt microphone, consider an ethernet connection and lights if using a webcam).*
- Inform speakers about webinar arrangement including advice on audio/visual.
- Decide appropriate licensing and copyright for webinar/recording.
- Schedule a practice session.

Webinar content

- Plan full webinar schedule.
- Think about introduction (emphasise the event as a live event).
- Prepare notes and scripts (if using).
- Create any visuals (e.g. slides).
- Test fast moving, complex visuals and video (especially sound).
- Practice using webcam if using (e.g. where to look, keeping notes out of view).
- Plan audience participation such as polls, questions and surveys.
- Plan how to manage attendee questions.

Promote and test

- review the number and background of those registered
- promote more if needed
- set-up all polls
- upload any handouts
- complete test session:
- using webinar controls

- testing audio (trouble shooting any audio problems)
- test how visuals appear (esp. fast-moving images or live demonstrations)
- rehearse webinar start, switching presenters, polls, and questions
- practice speakers muting and unmuting themselves
- check the file format and location of recording (will there be enough space to save the full webinar)
- have plans for worst case scenarios (e.g. loss of connection).

A few days to go

- Finalise content and circulate presentations.
- Prepare any “do not disturb signs”.
- Check registrations and promote if needed.

On the day

- Put up any “do not disturb signs”.
- Turn on computers in advance in case of updates, turn off notifications.
- Log-in to session 30-60 minutes before and check audio.
- Get all required applications ready and close any others.
- Customise webinar software (e.g. appearance of control panel).
- Get the first presentation ready (if using).
- Get everyone to mute themselves until it’s time to speak.

During the webinar

- Take your time.
- Try and avoid dead air between transitions and when doing polls (e.g. remind attendees how to answer questions or that a recording will be available).
- Keep yourself muted when not speaking.
- Remind people to complete the feedback form at the end.

After the webinar

- Obtain data on attendees including answers to evaluation questions.
- Process any raw evaluation data to get insight.
- Access the recorded files (if unsure of best format go for MP4).
- Edit the video if needed (possibly adding closed caption subtitles).
- Upload to website along with suitable metadata.
- Promote the uploads as a resource.

About the Editor

Kristi Winters earned her PhD in Political Behaviour from the University of Essex in 2009 and started making YouTube videos in 2015. In 2019, Kristi combine these two skill sets to create educational social science videos. She has created educational videos for the EU-Funded SERISS Project, for the European Values Survey, and The Data Documentation Initiative (DDI).



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R1

R2

R3

