Video Production Handbook for Short Educational Videos

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Introduction

Short educational videos offer an alternative or supplemental educational tool which can be viewed online, at workshops, and trainings to reach audiences with diverse learning styles. The popularity of YouTube and other social media, in addition to user desire for concise information, leads more and more people (in Extension throughout the country) to turn to video production.

The purpose of this handbook is to help you identify if video is an appropriate medium to reach your target audience (as opposed to a fading slideshow or narrated PowerPoint converted to an .mp4 for online viewing) and if video is the correct venue, provide you with specific examples to help you succeed in producing your own short educational video.

Video is a great medium to tell a story. The story could be as simple as starting a backyard vegetable garden; there is something the audience can gain from a visual adaptation and the personal connection that video offers. Video can help take your story from merely ‘telling’ to ‘showing’, and can be a very powerful teaching tool if used correctly.

It’s helpful to consider the overall workflow of creating a video. Decisions such as what the major takeaway message of the video will be, what equipment to use, and the sequence of filming each have effects on other aspects of the project. This can make it hard to know where to start. A common mistake among those new to visual storytelling is to hastily jump into a new project—looking at new cameras to buy, or calling up talent and asking them to be a part of their project—only to realize too late that they purchased the wrong equipment, asked the wrong questions during an interview, or didn’t know the content well enough.

This handbook will help you begin to see how seemingly small details and decisions can have a large impact on the final product. For support and information with video production contact: Joanne Littlefield (970) 491-4640 (Joanne.Littlefield@colostate.edu) and Susan Hutton (Susan.Hutton@colostate.edu).
Video production flow from start to finish

Pre-production
1. Visualization
2. Writing the script
3. Storyboard
4. Shot list
5. Choosing equipment
6. Prepare for a shoot

Production
7. Filming

Post Production
8. Logging and transcribing
9. Editing
10. Draft review
11. Revision(s)
12. Final review
13. Distribution
Overview of the process

Pre-production: Sixty percent of your time should be spent planning. Depending on the complexity of the project, another 20-25 percent will be spent filming, and the other 10-15 percent will be spent editing and making revisions.

Pre-production includes:

1. **Visualization** of the finished product. Think about large conceptual ideas; who will be viewing this, and why? What is the message? Why video? How and where will the video be shown? Will this be a companion piece to other educational materials? If so, are they meant to be used together, in sequence, or should the video stand alone? Will this be adapted for discreet audiences?

2. **Writing the script.** This is the detailed flow of what you’d like to see in the finished product. Once you have written the script you will have a much better idea about the main points, if this is better viewed as part of a series of videos, as well as how long the video presentation might be.

3. **Creating the storyboard.** With the draft script written that identifies the video content, you can now move on to identifying visual elements that support and enhance the message and facilitate understanding for your audience. Drawing these visual concepts is called storyboarding.

4. **Creating the shot list.** Organize your shot list on a separate document. You might need to organize your shots in a way that will minimize set-up time during filming, such as by the types of shots (long, medium or close-up) or by content (one person, two person, group shot, or indoor/outdoor). This will help maximize talent and location time as well as minimize the amount of camera and lighting adjustments. The end result will also have continuity. This type of shooting schedule can be confusing to your collaborators, but explaining your process will help. Unless your production requires documenting a demonstration from start to finish, it’s the final product that will be created through editing that is being filmed. Considerations such as changing light conditions (if filmed outside) and availability of talent may require additional adjustments.

5. **Choosing your equipment.** You have the content, and you know what the visual elements are going to be. Knowing this will make choosing the right equipment much easier. You won’t be as likely to overspend by renting a high-end camera if it’s a relatively simple project, nor will you end up on site with equipment inadequate for the desired task. Consider borrowing or renting gear your first time out.

6. **Preparing for your shoot**
   
   A. **A few weeks before.**
      
      Read the instruction manual that came with the camera; schedule some practice time. Locate manual and auto focus, and white balance functions. Try the zoom speeds; you want to be able to go from wide angle, to medium, to medium close up, to close up, to an extreme close up shot relatively quickly. You also need to practice capturing sound. Check for a microphone input and
check to see that the microphone you plan to use is compatible. If there is only an internal microphone, use an external device to capture audio and know where to place it so that it captures sound well but is not in the shot, and how to record and save audio files.

B. The day before.
Take time to ensure that you have all of the equipment that you need and that it is in working order. Check again to ensure that all of the functions that you need on your camera and audio recording devices are working correctly. Pack more charged batteries than you think you will need, and check to be sure there is enough space on the memory cards you plan on using (approximately 8 GB for every hour you spend recording video and 2 GB for every hour you spend recording audio. Bring extra SD cards.

C. A couple of hours before
Be sure to get to the site as early as possible before the ‘talent’ (person to be on camera) arrives. If you are filming at a location that is unfamiliar to you, it may take time to scout for a place that is optimally lit and quiet, even if your collaborators have identified a good location ahead of time. Set up the equipment; take your time to be sure the tripod is level and stable. Leave yourself plenty of time to prepare for the shoot. Bring water, shade and maybe even and lip balm for the talent. Have water on hand for yourself and other project members helping with the shoot and protection from the cold and wind during cold weather. Bring protection from the elements for your gear.

Production:

Filming
If possible bring someone along to help set things up, monitor activity that could compromise a shot (such as a dog barking, or airplane noise overhead), and log the shots.

Since most of what is produced ends up on the internet somewhere, avoid zooms, or sweeping pans. These visual aspects should only be used sparingly by experienced videographers, so don’t try to incorporate them into your first project.

Be on the lookout for things in the background that will be distracting to viewers and remove it as soon as you see it, or reframe the shot. Encourage the people involved to also be on the lookout for things that need to be corrected.

Be assertive and ready to adapt. Don’t be afraid to ask for as many takes as you need to get the shot right, or to take as much time as you need to set up for a new shot. Video production is a collaborative process with all members involved.
Post-production

1. **Logging and transcribing.** Log or transcribe all of the video that you captured at the end of each day. If you are shooting over several days, try to complete logging and transcribing after the end of each filming block. This way, if something needs to be reshot you can get it done while your talent is still available. **Before you start to make any edits complete this step.** Once you start editing, you will already know precisely where the clips you want to use are located.

2. **Editing.** Use the notes you took to locate the clips you need, along with your storyboard. Sequence the shots the way you planned in your storyboard, but also experiment with the order of the chosen clips. Now that you’ve been on location and understand the topic better, you may find a better way to convey the concepts of your video by rearranging the sequence in a way you hadn’t considered before.

3. **Draft Review.** This will be the rough draft file you’ll send out to the other members of the project. Make sure that all edits such as color correction and audio cleanup are near-perfect. You want the other members of the project to be able to focus on the conceptual aspects of the video and not on distracting edits or audio. Load the video to YouTube as ‘unlisted’, and send out the link asking for comments and suggestions, with some parameters as to when you’d like feedback.

4. **Revise.** After communicating with the other project members apply the agreed-upon corrections. If there is an issue that is beyond your capability to rectify as an editor, talk again with your project members and consider either reshooting or cutting out that scene. It may take several revisions before all members of the project are satisfied.

5. **Final Review.** Once you get comments back from the other members of the project, edit the video accordingly and send it back for one more review.

6. **Distribution.** This should be a continuation of a discussion that began during the pre-production phase of the project. Distribution includes making your YouTube link ‘public’, loading the video to a local website, or creating a dvd.
Chapter 1: Pre-production

Visualization

In video production, it is best to begin with the end in mind. The best question to first ask yourself, as well as you other project members is, ‘Will a video enhance understanding for my audience?’ Before you commit to creating a video, ask yourself if video is truly the best way to communicate your idea. Sometimes a fading slideshow or a PowerPoint converted to an mp4 can be more effective than video, and it is certainly easier and cheaper to produce. If you still feel that video is the best option, than proceed with planning your project.

In the very beginning it’s a good idea to be able to, in one to two sentences, give a description of your video. Before going any further, you are also going to want to give careful consideration to your audience and think about the appropriate tone for the video. Look at short educational videos you like and see if there are elements in it that you could incorporate into your project. These elements will help keep the project focused, and help guide you while you decide what the visual and auditory elements of the final product will be during the scripting and storyboarding phases of the pre-production.

Think about the nature of your content and how it would best be presented to your target audience. For example, if you are creating a video on professional development, an interview with several experts may resonate better with an audience than a narration with supplementary video. If you are creating a video on how to properly plant a salad garden interviews with expert gardeners may not be as effective as visually showing your audience how to correctly plant a salad garden with a voiceover to further explain your process. Each video project is unique and there are several ways to present information.

Working with a reviewer

If you start with one of the Colorado State University Extension fact sheets, you will need to further develop the ‘broadcast’ script with a reviewer. This means creating a ‘spoken word’ document from a print document. Contact the author or someone who has credible and expert knowledge on the subject matter to review your adaptation. The preliminary review will ensure that you are presenting accurate information to the public. Contact your reviewer in the beginning stages of your video so changes can easily be made. The reviewer’s name should be listed in the credits.

Interviews

You may decide to conduct an interview as part of your video. Interviews are a great choice to add a personal perspective from someone with first-hand experience with your subject matter.

The basic ‘How-To’ on conducting interviews.
1. Like any other video production project, your first step is to visualize your project, and ask yourself what you want your audience to gain from watching your video. What is the big take-away message you want to address?
2. Next, develop a script or in this case a series of questions that address the concepts you want to discuss. Avoid any questions that could be answered with a simple ‘yes’ or ‘no’. The first few questions you ask should be lighter, easier questions that help the interviewee start to think about the big picture and get them comfortable with being on camera. Questions such as ‘What is your name, and what is your interest in _____?’ or ‘Why did you get involved in your current organization?’ can be a good place to start. Send the list of questions to the interviewee in advance so that they can prepare their answers.

3. Think about the setting that would be most appropriate given the content and approach of your project, as well as the time of year you plan on shooting. For example, if you are conducting an interview with a small acreage farmer it may make sense to film in front of a row of crops; but if there is bad weather a kitchen with a display of vegetables may be a better choice. Try to scout out 2 or 3 settings that may work for the project, in case there are unanticipated problems. Ask the interviewee for suggestions.

4. Make sure that you practice using all of the equipment you plan on using during the day of the shoot, and if possible practice using your equipment in the setting you plan on shooting.

5. The day before the shoot make sure that all of your equipment is accounted for and in working order, and that all batteries are charged.

6. The day of the shoot, arrive to the location well before the planned time to conduct the interview and prepare the set. The only thing left to do by the time your interviewee arrives should be placing the microphone on them, adjusting the lighting and framing them in the shot. Be sure to also bring water for the interviewee and anyone else helping with the interview.

7. Those in your video who are not Colorado State University Extension employees must sign a release form available online at: www.ext.colostate.edu/staffres/photorel.pdf

Scripting

Videos streamed online should be no longer than three minutes. This short length will force you to focus your idea. It may be helpful to discuss ideas with others to fine tune an idea and decide what points you’d like to make in the video. For example, the small acreage coordinator first came up with the idea of pasture management, which is very broad. Next, she talked with others and developed a script which introduces five strategies of pasture management, which became five separate videos.

Read the script out loud to time the length; once you do that you’ll also know how to better rework the material and/or cut for the and audio presentation. Remember to pause between thoughts, and leave five seconds at the beginning for a title, and 10 seconds at the end for the credits. Also leave time to include a short narrative or text at the end which leads viewers to additional sources of information.
Final script

Be sure to give the final script to your talent as soon as possible so they have time to become familiar with it before the video shoot. The day of the shoot will be much easier and less time consuming if the talent is able to recite the script with ease.

Remember that a short educational video should not be more than two to three minutes long. Usually, a script for a two to three minute video will be less than a page when typed in 12 point font, single spaced.

Three versions of the same script have been provided. We used the script in all three phases of video production. The first script was edited to be as concise and effective as possible for a short educational video. The following script the version that will be used on the day of production. Note that the script is written in 24 point font and double spaced. This makes the script easier for the talent to read. There are also no sentences that spanning to a second page.. This creates a natural spot to end a clip, and will create a better flow in the finished product. The final script is used during post-production and shows the dialog of the script and corresponding visual elements. The fact sheet from which we adapted the script is on the next page. The adaptation for video follows the fact sheet.
Growing Container Salad Greens
Fact Sheet No. 9.378
Food and Nutrition Series \ Food Safety

by M. Burnig, F. Stenlake and A. Card

Benefits of Salad Bowl Gardening

Growing your own salad greens gives you the chance to have fresh, flavorful leafy vegetables and an opportunity to try some of the interesting varieties that are available. Often, the most colorful greens are higher in nutrients.

You will be able to harvest your first crop in just a few short weeks, using the small tender leaves that are often not available to buy. These micro-greens are the mix of choice for gourmet salads. Leafy greens also make a flavorful addition to sandwiches or wraps.

One of the joys of salad gardening is being able to plant once but harvest multiple times. Leafy vegetables can often be cut down almost to ground level and will regrow additional leaves for your next harvest.

You should be able to enjoy three or more harvests from each planting.

Salad mixes can be planted much closer together than other vegetables since they will not be maturing into full-sized plants. To have a season-long supply of greens, you may want to stagger your plantings to maintain a continuous supply of harvestable leafy greens – providing a salad source from early spring until fall.

Salad bowl gardening doesn’t require much effort or space – a deep tray, a few clay pots, or a 3-by-3 foot plot of ground in a sunny location can supply a bunch of salad greens. Growing in containers can help reduce problems with insects, soilborne diseases and poor soil conditions. Plus, your portable garden can be moved in order to catch more sun or shade as needed or to avoid extreme weather conditions.

Leafy greens are ideal for the cool temperatures and short seasons of

How to Grow a Salad Bowl Garden

Container: A tray, pot, or window box that is at least 18 inches across and 6 to 12 inches deep is a good choice. Deeper pots allow more room for roots and keep the soil from drying out as quickly.

The container can be made of clay, plastic or wood, but needs to have drainage holes in the bottom – you may want to use a self-watering container or position one tray inside another to prevent leaks. Fill the container with a good-quality potting mixture; some mixes are formulated to retain moisture that can be beneficial in Colorado’s dry climate. If containers are placed outside, plants and soil will be subject to more water loss and will need a larger reservoir of soil moisture.

Over time, mineral deposits and other debris can accumulate on the container and may harbor disease organisms and cause problems for plants.

To disinfect plant containers, use a stiff brush to remove soil and mineral deposits, soak in a solution of one part household bleach to nine parts water for at least 10 minutes, and rinse well with water.

Seeds: Greens grow quickly so they can start from seeds rather than transplants. In addition to being more economical, growing from seeds offers the opportunity to choose
Benefits of Salad Bowl Gardening

One of the joys of salad gardening is being able to plant once but harvest multiple times. Salad mixes can be planted much closer than other vegetables since they will not be maturing to full-size plants. To have a season long supply of greens, you will want to stagger plantings to maintain a continuous supply of harvestable greens, providing a salad source shortly after you plant.

Leafy vegetables can often be cut down almost to ground level and will regrow additional leaves for your next harvest. You should be able to enjoy three or more harvests from each planting. Growing your own salads gives you the chance to have fresh, flavorful, leafy vegetables and an opportunity to try interesting varieties. Often, the most colorful greens are higher in nutrients.

You will be able to harvest your first crop in just a few short weeks. Using the smaller, tenderer leaves that are not often available to buy. These microgreens are the mix of choice for gourmet salads. Leafy greens also make a flavorful edition to sandwiches or wraps.

Salad bowl gardening doesn’t require much effort or space- a deep tray, a few clay pots or a 3x3 foot plot of ground in a sunny location can supply a bunch of salad greens. Growing in containers can help reduce problems with insects, soil borne diseases and poor soil conditions. Plus, your portable garden can be moved in order to catch more sun or shade as needed or to avoid extreme soil conditions.

Leafy greens are ideal for the cool temperatures and short seasons of Colorado because they can be eaten at any stage of maturity and grown in portable containers.
Benefits of Salad Bowl Gardening

Planting a salad garden means you can plant once but harvest multiple times. Salad mixes can be planted much closer than other vegetables since they will not be maturing to full-size plants. To have a season long supply of greens, stagger plantings to maintain a continuous supply of harvestable greens.

Leafy vegetables can often be cut down almost to ground level and will regrow additional leaves.

You should be able to enjoy three or more harvests from each planting. Growing your own salads gives you the chance to have fresh, flavorful, leafy vegetables and an opportunity to try interesting varieties. Often, the most colorful greens are higher in nutrients.

You will be able to harvest your first crop in just a few short weeks. You can use the smaller, tenderer leaves.

These microgreens are the mix of choice for gourmet salads. Leafy greens also make a flavorful edition to sandwiches or wraps.

Salad bowl gardening doesn’t require much effort or space—a deep tray, a few clay pots or a three by three foot plot of ground in a sunny location can supply a bunch of salad greens. Growing in containers can help reduce problems with insects, soil borne diseases and poor soil conditions. Plus, your portable garden can be moved in order to catch more sun or shade as needed or to avoid extreme soil conditions.

Leafy greens are ideal for the cool temperatures and short seasons of Colorado because they can be eaten at any stage of maturity and grown in portable containers.
Storyboard

As you were writing the script, you probably started to get some ideas about what you would like to include in the final production. A storyboard is a series of rough sketches outlining the scene sequence or actions to be shot on video. The storyboard is crucial to helping you visualize your script. Start matching the visual elements with your script. Experiment by mixing up the visual elements in various ways in order to best enhance understanding in your audience. Consider that PowerPoint slides, still images, or other graphic elements can also add interest and clarity to your project. They can also help to lower the overall cost of producing your video. If you decide to incorporate a graphic element, be sure to get permission from the creator.

Shot list

The next step is to develop a shot list, which is simply a list of shots you want to be you capture in the field. The storyboard and shot list will direct you and your team during the video shoot, helping you consider shot angles, types of shots (establishing shot, close-ups, etc.), and how you will begin and end the video. From the shot list you may also want to construct a list of props that will be helpful list. This ensures that you bring the correct props to the site, and that you don’t forget to use them in the shoot.

Many videographers also make a separate shot list for b-roll. B-roll is the secondary footage that adds meaning to a sequence and disguises the elimination of unwanted content. For example, if you are making a video featuring an interview of an expert horseman on basic riding techniques, b-roll shots could be a rider exemplifying these techniques. Matching b-roll shots is very useful to help hide cuts made in an interview. Make a list of b-roll shots and plan on taking more shots than you think you will need. The more shots you have to choose from, the easier it will be during editing.
**Sample shot list**

**Video Title: Benefits of Salad Bowl Garden**

<table>
<thead>
<tr>
<th>Scene #</th>
<th>Location</th>
<th>Frame</th>
<th>Action</th>
<th>Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Produce Aisle</td>
<td>MS</td>
<td>Man selecting vegetables from display</td>
<td>:10</td>
<td>*Need consent form for grocery store</td>
</tr>
<tr>
<td>2</td>
<td>Backyard garden</td>
<td>LS</td>
<td>Vegetable plot, mountains in background</td>
<td>:10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Front porch</td>
<td>MS</td>
<td>Different types of container gardens -hanging, -terra cotta pots -Crates</td>
<td>:05</td>
<td>Need to bring pots with full gardens inside to set</td>
</tr>
<tr>
<td>4</td>
<td>Front porch</td>
<td>CU</td>
<td>Three different size plants</td>
<td>:10</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Front porch</td>
<td>CU</td>
<td>Hand reaches down and picks lettuce plants</td>
<td>:10</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Front porch</td>
<td>CU</td>
<td>Small, newer plants emerging from soil</td>
<td>:05</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Kitchen</td>
<td>ECU</td>
<td>Hand holding a salad wrap, brings it to the mouth and takes a bite</td>
<td>:10</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Back porch</td>
<td>MS</td>
<td>Different types of EMPTY container gardens -hanging, -terra cotta pots -Crates</td>
<td>:10</td>
<td>Need to bring empty container garden pots-clean</td>
</tr>
<tr>
<td>9</td>
<td>Backyard garden</td>
<td>LS</td>
<td>Person moves a container garden out of the sun and into shade</td>
<td>:15</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Backyard garden</td>
<td>LS</td>
<td>Vegetable plot, mountains in background</td>
<td>:10</td>
<td></td>
</tr>
</tbody>
</table>

*LS: long shot*

*MS: medium shot*

*ECU: extreme close up*

*CU: close up*
Equipment and software

The basics

Basic equipment needed for any video production:
- camera
- auxiliary microphone
- tripod
- extra batteries
- SD chip (greater than 8GB)
- editing software
- ‘talent’
- lighting *

*As a beginning videographer you may not be ready to invest in lighting equipment, but household items, such as lamps and window light, can be used for supplementary light while white paper or poster board may be used as reflectors.

Additional equipment might include other audio recording devices. You should also consider auxiliary hard drives or additional memory cards because video files will take up a lot of space. Your budget and video idea will determine what type of camera and equipment you’ll need.

Consider your project before you buy:

Before you buy any equipment, look back at the script and storyboard. What visual and auditory elements it will take in order to convey your message? Try to incorporate equipment that you already have into your project.

Think of questions such as:

Do I need a voiceover for this scene?
You may need to have special equipment to record high quality audio.

Will there be a lot of action in this shot?
You will need a camera lens that can handle wide angle shots.

Will I be capturing video outside?
Use a lens cleaner to keep dust and debris from distorting your shot and scratching your lens. If you are planning on capturing sound outside, try to scout out the location and look for natural wind blocks and bring protection for your microphone, such as a windscreen. This will help minimize the distortion of wind in your audio.

It may seem tedious and unnecessary to systematically go through such questions, but they are absolutely essential to avoid reshooting and long frustrating hours in the editing room. Communicate with other project members to identify the unique aspects of the video.
Here are our current equipment recommendations:

**Basic iPad kit: picture catalog**

- *iPad*
- *Microphone for mobile device*
- *Tripod*
- *iPad tripod mount*

**Sources:**
- iPad ([http://store.storeimages.cdn-apple.com](http://store.storeimages.cdn-apple.com))
- [bhphotovideo.com/c/product/1030653-REG/makayama_mm_air_movie_mount_for_ipad.html](http://bhphotovideo.com/c/product/1030653-REG/makayama_mm_air_movie_mount_for_ipad.html)
The Basic ‘Prosumer’ kit: picture catalog

camera    camera battery    camera battery charger

tripod    lavaliere microphone    microphone batteries    memory cards

Sources
- www.bhphotovideo.com/c/product/944398-REG/polsen__olm_10_omni_directional_lav.html
- www.bhphotovideo.com/c/product/842090-REG/magnus_vt_300_video_tripod_w_2_way.html
- www.walmart.com/ip/Energizer-EVE357BPZ3-Energizer-357-1.5V-Watch-Calculator-Batteries/21586628
- www.walmart.com/ip/SanDisk-16GB-Class-4-SD-Card/23350705
Weigh your options

Each video production comes with its own needs and challenges. When people say you need to ‘know your equipment’ what they really mean is you need to understand the limitations of your equipment.

To get the most usable footage you have to understand how to strategically use the best qualities of your equipment and work around its limitations. As you become more experienced in videography, you will get better at foreseeing potential challenges during a shoot.
iPad vs Nikon

**iPad**

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very easy to use</td>
<td>Limited zoom functions</td>
</tr>
<tr>
<td>Light and portable</td>
<td>No depth of field</td>
</tr>
<tr>
<td>Endless video recording/editing apps and accessories</td>
<td>Doesn’t take edits in post-production well</td>
</tr>
</tbody>
</table>

**Nikon 5200**

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairly easy to use</td>
<td>No headphone plugin</td>
</tr>
<tr>
<td>Many of the same capabilities as a professional studio camera</td>
<td></td>
</tr>
<tr>
<td>Ability to zoom in</td>
<td></td>
</tr>
</tbody>
</table>

**Software**

Editing software is necessary to create a final video. As you get started, we recommend using either iMovie or Windows MovieMaker. These are very comparable in terms of capability, and user friendliness.

Remember to consider the minimum system requirements needed for each program to run properly. Check with your IT department to ensure that you have the correct system requirements to run your chosen editing software.

With most programs, there is a learning curve, but many are very learnable and user friendly. You can edit video and audio, add text and titles, insert pictures or images, and create a final rendered file that you will load to a website or YouTube, or burn to a DVD.

**Preparing for a Video Shoot**

**Practice using your equipment:**

After you have acquired the equipment you plan on using during your shoot, be sure that you give yourself adequate time to practice using each of the features of every piece of equipment you will be using. Read the instruction manual. You should expect to put in at least 5-10 hours of practice using all of your equipment, including the camera, tripod, audio recording devices, and any additional equipment you plan on using, such as three-point lights and props.

Get a feel for how much room you will need in order to shoot your video. Practice using zoom, focus, and white balance settings and be sure that you know how to frame close-up, medium, and wide angle shots before you actually shoot. Your camera may have different settings for close-up, auto, portrait, and landscape settings, and it you should know when and how to use these settings. Many people also overlook practicing using their accessories such as a tripod. Different tripods have different locking mechanisms, and different ways to control pans (moving side to side) and tilts (moving up and down).
Be sure to spend the time also getting familiar with the editing software. Be sure that you know how to at least import your video and audio sources, cut, rearrange and delete clips, and export the final project.

Scouting a location:

After you develop a storyboard, you will also need to determine the location(s) where you will shoot the video. If the location is privately owned, get permission from the landowner. A Property Release form is available at: www.ext.colostate.edu/staffres/photorel.pdf; a Spanish translation is available at: www.ext.colostate.edu/staffres/photorel-sp.pdf

Scout out the location before the day of the shoot so you know specifically where you’d like to shoot. B-roll can be shot at various locations and times, but consider visual consistency, including light, shadow and clouds, when shooting in short segments. You also want to be sensitive to the person on whose property you are shooting. You may think it is fine to do film with weedy or muddy landscapes in the background but this may embarrass the landowner. At the same time, you want to choose a location that will enhance understanding for your audience; don’t choose an unrelated background that may confuse the message. Also think about the logistics of preparing the set. You want to look for a place where you can put a tripod on even ground, as well as the best place for equipment to avoid damage.

Lighting is an important considerations when scouting a location, especially when shooting outside. Avoid filming in the middle of a bright day as this will produce images oversaturated with white light and hard, unflattering shadows.

Props and equipment

Remember, you are both the producer and director and must facilitate the entire production. Getting things ready before the video shoot will prevent wasting time. You’ll need to determine what equipment and props will be needed for the video shoot and confirm the shoot location and date with your team to make sure everyone is there when expected. Arrange to have tripod(s), camera(s), microphone(s), and lights ready for the shoot. Don’t forget to charge batteries and bring extras. A sample list of equipment is provided here and a blank for you to print and use for each shoot is in the appendix.
Shoot Checklist
For All

☐ Business Cards
☐ Release forms

Photo
☐ Nikon Camera
☐ Charged battery
☐ Memory card
☐ Spare battery
☐ Battery charger
☐ Small Tripod
☐ Reflector

Audio
☐ Record deck (Edirol and/or Zoom)
☐ Memory card
☐ 2 AA batteries and spares

Accessories
☐ Extension cord
☐ Power strip
☐ Lights

For Video
☐ Canon
☐ Tripod
☐ Battery
☐ Battery charger
☐ Wireless microphone
☐ Tape or memory card
☐ Small tripod
☐ Tape or memory card

On Location
You should arrive with at least enough time before your talent or others involved in the project arrive, to prepare the set. That way you’ll be able to scout a location that is away from too much background noise and optimal lighting, and make those recommendations once everyone arrives. Set up your tripod and camera, and give extra thought as to how you will capture sound. Too often microphone placement is only an afterthought, but many studies show that audiences judge the quality of a video not on the image, but the audio. As such, microphone placement deserves careful consideration. By the time others arrives the only things left to do should be placing a lavalier mic on them and framing the shot.
Chapter 2: Production

If you have not read all of Chapter 1: Preproduction, please go back and read that first.

- **Use a tripod.** This is the only way to avoid getting shaky footage.
- This is not the time to experiment, so don’t try any new techniques or use any equipment that you have not practiced using.
- Avoid pans or zooms, as this is very distracting for an audience.
- If your camera has a plug in for headphones, use them. *This will help you ensure that you get good quality audio before you leave for the day.* This is extremely important because you cannot turn bad audio into good audio post production. Always make sure that your subject is in focus once the scene begins, as this is another aspect that you will not be able to fix post production.
- When recording video for an interview or action shot, be sure to record a eight second ‘buffer’ before and after each shot. This will give you a clean place for cuts when you begin editing your video. Count down from five with your fingers so the talent knows when to begin.
- When recording b-roll, or supplementary footage, make sure that every shot is at least 30 seconds long.
- Plan on about an hour of ‘field time’ for every two to three minutes of your final project.
- Continuity is also an important aspect in video production to keep in mind. Continuity is how a video producer cues the audience as to what point in time an event is taking place.

One example when continuity was especially important was during the Concession Stand Food Safety video series produced by Colorado State University Extension. In this video series ‘Food Safety Chick’ goes back in time to correct food safety mistakes made by the workers at the concession stand. The use of props like disposable gloves and thermometers help the audience know that the food safety issue has been corrected, and should only appear after the mistake has been identified. You can watch the video series here: [www.youtube.com/user/CSULittlefield/playlists](http://www.youtube.com/user/CSULittlefield/playlists)

Other cues the audience will get from the footage could be lighting (was the footage shot at sunrise, midday, or at night?), and wardrobe (if certain events are supposed to happen in one day, the actors should be wearing the same clothes). Although continuity is important is post production as well, it is something a producer wants to take careful consideration of and be mindful of where in the sequence of shots the footage that is currently going to be filmed will be.

There is a lot the producer of a film needs to be aware of on set, and it can be easy to get flustered and make mistakes. Remember to take adequate time in framing a shot, and do as many takes of a scene as you need to get the shot right. Use whoever is available for extra sets of eyes to be sure everything is in order.
Framing the shot
Every photographer or videographer develops her own style for framing a shot, however there are still a few basic do’s and don’ts that are considered universal.

The rule of thirds
Many amateur videographers and photographers instinctively center the shot, but the rule of thirds contradicts this action. Your subject should be either to the left or the right of the screen, with an interesting and relevant background. You can imagine two vertical lines dividing your screen into three equal parts, and your subject’s nose should be split by the line on the left or right of the screen.

Angles
Consider the angle of the camera. Set up the tripod so the camera rests at shoulder or eye level. This gives the most comfortable point of view for the audience.

Shots to avoid
When filming people, avoid cutting off subject’s waist, knees, or feet at the bottom of the screen.

Pay attention to what is in your background, and make sure that there is nothing that isn’t supposed to be there or anything distracting. Look for reflections from your light in the background, brand names, or anything creating disrupting shadows (a subject’s hat, a tripod, someone behind the camera). The pictures shown below illustrate how unintended items such as
equipment cords, forgotten scripts, unintentional product placement, or distracting reflections in a shot deteriorate the quality of an image.

Lighting a subject

Whenever you can, film in natural light. This can be done by filming outside during the golden hours of the day (the hour after sunrise, or the hour after sunset) or by filming indoors near a window (however be careful not to frame a subject directly in front of a window). A really simple trick that we often use is to have a subject hold a piece of paper as if it were a tray just above waist height, with the paper angled slightly. This helps light reflect back up into their face and fill in the shadows.

For almost all of the interviews conducted inside we use a three-point lighting technique, which is a standard technique for lighting among photographers and videographers.

Three-point lighting includes a key light (facing the person), a fill light (off to the side), and a back light. The key light is the main source of light on a subject. The fill light fills in and softens the shadows across the subject. The backlight highlights the edges of a subject to separate them from the background. This can be done with a lighting kit, or with household lamps and natural light sources.

Below is a diagram of how to set up a standard three-point light in a studio, and how you can mimic a three-point light set up on location.

In the studio

In the field:

[Diagram of three-point lighting setup]

www.mediacollege.com/lighting/three-point
What to wear on camera

Be sure that your talent wears appropriate clothing. Advise them to avoid wearing dark solid colors, and avoid patterns, stripes, and black, white, or red colored shirts. Mid-range colors work the best. Remind your talent to practice the script with minimal gestures, avoid swaying, bouncing, or moving from side to side. Dangly earrings are a distraction.

Recording high quality audio

The most important thing to remember when capturing high quality audio is that the recording device needs to be as close as possible to your sound source. Don’t rely on the built-in microphone in your camera. When filming people, it is usually best to record audio on a lavaliere that is attached to the person’s collar. This is a small clip on microphone that allows you to place the mic close to the subject’s mouth. To conceal the wire, have the subject run the microphone up under their shirt and attach the clip to the collar of the shirt.

For some videos, you may not need to see the person talking or explaining your content at all, such as in a ‘how-to’ video. In this case you will be able to record the voice-over later in a quiet place, using a high-quality microphone.

While you are recording audio, be mindful that some sounds you don’t want may come into your track, such as an airplane flying by, a dog barking, or someone off-screen talking. While you are recording, always monitor your audio with headphones. This way, you will be able to redo a section if needed. It is much harder, if not impossible, to remove unwanted sounds in post-production without sacrificing the overall quality of your audio track.

Interacting with your crew and talent

Bring water for your interviewee (and yourself, and any crew) when filming. The goal is to keep the subject composed throughout the shoot. Remind them again of the big ideas of the video before you begin shooting and the overall ‘look’ that you are trying to achieve, this will help you and the subject get on the same page before the interview starts. It’s not uncommon for the on-camera person to at some point during a shoot to get flustered, or lose their train of thought. They may need you to help them articulate their thoughts into a concise response. For a subject delivering lines from a script, they may need a break to collect themselves and get a glass of water. Each person will react differently to being recorded on film, so try to read the situation and respond appropriately to their reactions.
Chapter 3: Post-Production

If you skipped Chapter 1: Preproduction, or Chapter 2: Production, go back and read them before proceeding to this chapter.

Transcribing or logging

This step in video production is essential to help you stay organized, and efficiently edit your video. Transcribing and/or logging will save you time when you are editing and need to remember what shot to use and where it is.

Transcribing, means typing out word for word, what a person in the shot is saying. You should also take brief notes about the visual aspects and quality of a shot. Transcribing also notes the in and out points (where a scene starts and ends) of a clip. This type of note taking, although tedious, can be especially useful in projects that are educational or technical in nature and require very specific wording for success. This is also very useful for closed captioning.

Logging, is the process of taking brief notes about the content of a clip such as what is being shot, what is being said, and if the quality was good or bad. In this type of note taking the in and out point of usable clips is taken. This type of note taking is usually faster than transcribing, and is more useful in projects that rely more on the visual aspects of the video rather than auditory, or on smaller products that do not require much footage.

Both of these types of note taking should be done to organize your projects.

While you transcribe/log the footage, you should also take note of any scenes that may need to be re-shot, and work with the team on accomplishing this goal.

On the next page, you will find an example of a transcription and the video log.
**Example of transcription:**

DSC 0001 - Susie: Introduction

**Example of Video Log:**

<table>
<thead>
<tr>
<th>In</th>
<th>Out</th>
<th>Total Time</th>
<th>Visual</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:05</td>
<td>00:15</td>
<td>10 sec</td>
<td>MS Natural light-Cool tones</td>
<td>Hi, I’m Susie and I’ve been with Colorado State University Extension for almost 2 years. My, my undergrad was in…</td>
</tr>
<tr>
<td>00:30</td>
<td>00:45</td>
<td>15 sec</td>
<td>MS Natural light-Cool tones</td>
<td>Hi, I’m Susie and I’ve been with Colorado State University Extension for almost 2 years. I received my undergraduate degree in Animal Science in December 2014, and have been working full-time in Extension since January.</td>
</tr>
</tbody>
</table>

**MS-medium shot**

_A blank copy of the video log is provided in the appendix_
**Video/audio script**

Benefits of salad bowl gardening (01:13)

A script in this format will help you compose your shots in post-production

<table>
<thead>
<tr>
<th>Audio (Narration)</th>
<th>Video</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Potentially music</em></td>
<td><strong>Intro:</strong> Colorful background with CSU/Extension graphic and Title</td>
<td>:05</td>
</tr>
<tr>
<td>Planting a salad garden means you can plant once but harvest multiple times. Salad mixes can be planted much closer than other vegetables since they will not be maturing to full-size plants. To have a season long supply of greens stagger plantings to maintain a continuous supply of harvestable leafy greens</td>
<td><strong>Produce aisle (MS)</strong></td>
<td>:05</td>
</tr>
<tr>
<td></td>
<td><strong>Garden Plot (LS)</strong></td>
<td>:05</td>
</tr>
<tr>
<td></td>
<td><strong>Container gardens (MS)</strong></td>
<td>:05</td>
</tr>
<tr>
<td></td>
<td><strong>3 sizes of plants growing (CU)</strong></td>
<td>:05</td>
</tr>
<tr>
<td>Leafy vegetables can often be cut down almost to ground level and will regrow additional leaves You should be able to enjoy three or more harvests from each planting. Growing your own salads gives you the chance to have fresh, flavorful, leafy vegetables and an opportunity to try interesting varieties. Often, the most colorful greens are higher in nutrients.</td>
<td><strong>Harvesting lettuce (CU)</strong></td>
<td>:10</td>
</tr>
<tr>
<td></td>
<td><strong>10 Stills of salad</strong></td>
<td></td>
</tr>
<tr>
<td>You will be able to harvest your first crop in just a few short weeks. You can use the smaller, tenderer leaves. These microgreens are the mix of choice for gourmet salads. Leafy greens also make a flavorful edition to sandwiches or wraps.</td>
<td><strong>New-ish plants emerging (CU)</strong></td>
<td>:05</td>
</tr>
<tr>
<td></td>
<td><strong>Person eating a wrap (CU)</strong></td>
<td>:03</td>
</tr>
<tr>
<td>Salad bowl gardening doesn't require much effort or space- a deep tray, a few clay pots or a 3x3 foot plot of ground in a sunny location can supply a bunch of salad greens. Growing in containers can help reduce problems with insects, soil borne diseases and poor soil conditions. Plus, your portable garden can be moved in order to catch more sun or shade as needed or to avoid extreme soil conditions</td>
<td><strong>Various containers (MS)</strong></td>
<td>:05</td>
</tr>
<tr>
<td></td>
<td><strong>Still shot of insects</strong></td>
<td>:05</td>
</tr>
<tr>
<td></td>
<td><strong>Person moving pot from sun to shade (LS)</strong></td>
<td>:05</td>
</tr>
</tbody>
</table>
**Editing**

Converting Files
We recommend these video formats in the following software to create your videos

- iMovie: mp4 or QuickTime
- Windows MovieMaker: mp4, QuickTime, or wmv

**Getting started with software**

Before you get too immersed in the editing process, take a step back and ask yourself ‘who is my target audience?’ just as you did at the very beginning of this project. Remembering who your target audience will help you choose the appropriate sequencing, pace, and graphic elements for your video production. For example a young audience may find a lot of moving graphics added in to the video as fun while a senior audience will likely find the same aspect distracting. Also think about how this video will be viewed (for example, a viewer may have a hard time loading a longer video with a lot of graphical elements if they are watching it on a mobile device). Make sure that you get familiar with the interface you are using and that you know how to import the files you need. It will help to keep all of the assets you plan on using in the same folder on your computer.

**Music**

Research has shown that adding music to an informational/educational video impedes learning, so while it is okay to use it at the beginning or end of a video, consider if the music will detract from the message you are trying to communicate. Use sparingly in transitions from one shot to the next throughout the production. Natural sounds, however, recorded on location, often add interest and should be added as appropriate to the subject. Listen to 'Morning Edition' or 'All Things Considered' on National Public Radio for inspiration from the producers there who do a great job of incorporating natural sound designed to pull audience members into the story. Then try your hand at their techniques. Start small with just a few supplemental elements to the audio track, such as the sound of running water, an engine idling, or in the case of a recent forest management video, the sound of logging equipment (www.youtube.com/watch?v=y1VcBgiGQA&feature=youtu.be).

There are a number of sources for public domain sound recordings on the internet including the following: https://soundcloud.com/search/sounds?q=music%20for%20videos&filter.license=to_modify_commercially. Please read and comply with any usage limitations associated with the use of these recordings. Use of copyright protected music without permission of the copyright owner can lead to legal liability.

**Font**

Font for any text must be CSU approved, according to the university Communicator’s Toolbox http://graphicstandards.colostate.edu/web-requirements.aspx. The approved fonts are: Swiss 721, Garamond, Arial, Minion and Helvetica. Restrict shadowing on fonts to above the letters, below. Reference any graphic elements (such as charts or maps), including the source, on the graphic itself.
Visual supplements: photographs, graphics and titles
When it’s not possible to shoot video, because of weather or seasonal restrictions, still photos can be used, and are often a good best choice when showing detail. Be sure to follow any copyright restrictions. The ‘Colorado State University Extension’ graphic must appear in the opening and at the end of the video. Use a transparent logo if appropriate. Graphic files for video productions are located online under Extension faculty/staff resources/communication.

Transitions
There will probably be many options for both visual and auditory transitions in your chosen editing software. Have fun playing around with them, but before you send anything for approval, review to be sure you are conveying the agreed-upon message. Often the simpler transitions such as ‘dip to black’ or ‘dip to white’ are best. For audio, try adding fades at the open and close of your video to introduce that natural sound (nat sound) to the audience in order to bring them into the story. If you use any audio transitions in the body of your video, make sure to review all of your transitions once you’ve created the final file for review, as what you think you are creating in a software program may not transfer well to the final file, nor look or sound as good as you thought when uploaded to an online site.

Continuity
As discussed in Chapter 2: Production, continuity gives your audience a time anchor as to where a scene is taking place. The videographer keeps this concept in mind when composing a shot during production, and the video editor needs to also keep this concept in mind when arranging video clips during in post-production. The following pictures illustrate the confusion when an editor does not consider this concept.

This sequence of a person serving chili was captured for a food safety video. The shots were to be used together as a medium close up, close up and wider shot, to be edited with accompanying audio. However in one shot she has a glove on and the others she does not, and because the ladle does not stay on the same side of the pot or in the same hand, this effect leads to confusion for the audience.
**Credits**

As you are creating your video, be sure to create a separate document for any credits you want to give at the end. This way if you decide to add in anything during post production, such as photographs or quotes you have all of the needed information in one place.

**First Draft**

Drafts should be edited and revised within your own department before sending anything to a client. Check for errors in continuity, typos in text boxes, and ensure the best audio and visual quality within your ability. Look out for any brand names in the background, you don’t want your audience to confuse this video as an ad for a product. To create a video which can be viewed with Windows Media Player (or other common players), render a draft video in .wmv that is compressed; .avi format is an uncompressed file which means a larger file size. The file will be too large to email, but can be loaded to YouTube with a ‘private’ or ‘unlisted’ setting. Then simply send the link to your reviewers. You may also consider using Dropbox, Box or another file sharing service. Ask your reviewer(s) for specific comments and give them a deadline.

Use the sample email such as the one below to describe the purpose of the review process and what you expect from your reviewers.

---

Dear Syndi,

Enclosed is a YouTube link containing the video, ‘       ’. Please review the video by (dd/mm)

The purpose of the review process is to fact check, to confirm that details are presented accurately, and to make sure there is no misleading information.

The videos contain very basic information and are to act as a ‘commercial’ or ‘preview’ to draw interest and direct viewers to our resources online for more detailed information.

Thanks for your help in reviewing the video. Please contact me after you’ve watched it with any suggestions. Please note the time and duration on the video to note any suggested changes.

---

**Final draft and distribution**

Formats that work well for online viewing are .wmv (Windows Media Viewer), .swf and .flv (both Flash), and .mov (Quicktime). Both Windows Media Player and Flash Player are very common media players, and end users should have no problem viewing your video; .mpg, .mp4, and .avi are great ‘working’ formats to burn onto DVDs, or carrying via a thumb drive. These file are not web-friendly because of their large file size.
• If you are posting only to your local website, work with your local webmaster to ensure you’ve saved it in the proper format and compressed, for web viewing.

• Don’t forget to delete old files once the final video is produced.

Send the video link to interested and appropriate people, for a wider distribution, through YouTube or Vimeo; provide the link on your local website, Facebook pages and other social media.
References

Bourne, J., Burstein, D. *Web Video: Making It Great, Getting It Noticed*


## Appendix 1: Shoot Checklist

### For All
- Business Cards
- Release forms

### Photo
- Nikon Camera
- Charged battery
- Memory card
- Spare battery
- Battery charger
- Small Tripod
- Reflector

### Audio
- Record deck (Edirol and/or Zoom)
- Memory card
- 2 AA batteries and spares

### For Video
- Canon
- Tripod
- Battery
- Battery charger
- Wireless microphone
- Tape or memory card
- Small tripod
- Tape or memory card

### Accessories
- Extension cord
- Power strip
- Lights
Appendix 2: Storyboard

Video Title:
Appendix 3: Video Logging Sheet

Title of Video:

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIMECODE</th>
<th>LENGTH</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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