**Video Editing in Agriscience Programs**

Benefits in the classroom, FFA and SAE

Masters of Arts Project Defense

Michigan State University

Rebel Smith

July 30, 2024

**CHAPTER 1**

My fascination with video editing began many years ago. In preparation for the Michigan FFA State Convention, I had worked with the Michigan State University College of Agriculture Video Production Department on a few projects. I really found the process of editing videos interesting and enjoyed working with the people in the department. Later in my undergraduate work I was required to do an internship within the agricultural industry. I was able to do a semester-long internship which developed into a part time job working in the Video Production Department within the College of Agriculture and Natural Resources at MSU. During this internship and employment, I quickly realized the potential teaching tool that video media was and the importance of editing quality videos. I purchased a camera and editing software and began to do some projects on my own as well. As I transitioned from undergraduate student to professional teacher I continued to create video projects for personal as well as professional topics. My students were excited to be involved and to see the finished products which were usually commercials for our daily school announcements advertising upcoming events. Sadly, as my list of responsibilities grew, and technology aged, video editing ability was lost. More than ten years have passed since I last edited videos using a computer. During my masters program at Michigan State University the opportunity to create a project to improve my program presented itself; at that point, I knew that incorporating video editing into my agriscience program would be the focus of my Masters project.

Research has shown that incorporating video as a means of delivering content not only increases student engagement but also leads to higher retention rates and improved student growth (Wong, 2020). In addition, distance learning has continued to grow in popularity (Wong, 2020). While distance learning is often thought of as online courses, the term distance learning is now used to describe students who miss class for a variety of reasons. Video content that is available through an online platform is readily available for all students regardless of why they missed the initial content delivery. Students who are sick, at another school function, suspended or any other reason can still access the content. Finally, this content is available on the students schedule. Content available online can be accessed anytime of day, as long as students have access to the internet. In addition to accessing the content initially, students can later choose to use this content as a way of reviewing material. Creating high quality video content and additionally, posting this content online will make the content more accessible for students.

A major component of the complete Agriscience program is managing the local chapter of the National FFA Organization. Video editing may prove to be a very powerful tool for FFA advisors looking to communicate with students, parents and the community. Still further, video content may be used to promote FFA events and activities. Finally, the use of video content could be used as a recruiting tool. Incorporating video into a local FFA chapter would prove beneficial to the chapter in terms of recruiting new members and recognizing those members who have excelled in the chapter.

**TERMS TO KNOW**

**Capturing -** recording video and / or audio content

**Cut -** when the video changes from one clip to another

**L-Cut** - when the audio from one video clip overlaps the next video clip or slide

**J-Cut** - when the audio from one clip begins over the top of another clip

**Media** - the type or format of the content being created

**Voice Over** - a method used in video editing where the audio is captured and used in

coordination with the video - the video and audio were captured at different times

**B-Roll** - refers to background or filler video that fills in the space during longer voice over

sections

**Rendering** - a process used at the end of the video editing phase. Rendering a video creates a

finished product in a format that can be saved, viewed and shared in the future.

**TPACK (Technological, Pedagogical and Content Knowledge)** - TPACK explains that good

teaching considers the content, the style and the technology used during teaching.

**CHAPTER 2**

As explained by Mishra and Koehler (2009) good teaching in the 21st century considers a technological component to instruction. Technological Pedagogical Content Knowledge (TPACK) is the concept that teachers combine deep content knowledge with methods that engage their students while also incorporating the most appropriate technological tools (Mishra, P. and Koehler, M. 2009). The inclusion of videos in lectures not only engages students, but this leads to better test scores in the future (Wong, 2020). According to a study conducted by Wong (2020) 68% of students agreed or strongly agreed that videos helped them to understand the concept and additionally 69% agreed or strongly agreed that video enhanced the topic being taught (Wong, 2020). The use of video content captures the attention of learners in ways that traditional teaching often struggles to do. It is a more enjoyable way to learn because it is more immersive (Sharma, 2024). Research shows that students who learn through video-based instruction have better retention than students taught in traditional ways (Sharma, 2024). And teachers agree; 97% of educational professionals believe that student learning is enhanced through videos (Sharma, 2024).

The Agriscience, Food and Natural Resources curriculum is often taught with hands-on experiential learning. However, there are some places in the agriculture and natural resources industry where it is not applicable, or safe to take a class of students. Distance, timing, safety and cost all have the potential to reduce student experiences. The use of video field trips, recorded interviews and instructional videos can fill that void in AFNR education.

The COVID 19 pandemic required educators to think about their methods for delivering content. Distance learning became a necessity rather than a luxury. Post Covid it seems that distance learning is continuing to grow in popularity. As distance learning continues to increase in popularity the inclusion of video content is not only useful but necessary to maintain the attention of students (Wong, 2020). We often think of distance learning as “online courses” where the entire class meets virtually. In the traditional high school setting there are plenty of distance learning opportunities in a typical school year. Students who are sick, suspended, or gone for any other reason can still have access to content that is captured and available via video. Still further, when the teacher is not at school, an edited video to deliver content and instruction could serve all students better than a substitute reading from the teachers notes. Videos provide the opportunity to pause, rewind, and replay in order to review (Sharma, 2024). In addition, the inclusion of closed captioning can help to break down barriers for students with disabilities or language barriers. Teachers creating video media in order to deliver content have the chance to fact check, cite, consider areas where students may have difficulty and organize their lesson in the most effective manner. Finally, video content is available in the future. A finished project may serve students for many years to come. There are many reasons to think that video content delivery may not only be as good as but perhaps even better than traditional lecture.

**CHAPTER 3**

I have seen hundreds of educational videos both as a student and as a teacher. While I have always been able to evaluate a video as helpful or not, the reason why the video is or is not helpful was difficult to explain. Effective Educational Videos by Brame was very beneficial for me to better understand what things to do and not to do when creating video content. Brame highlights four key components of video content creation; signaling, segmenting, weeding and matching modality. Signaling refers to adding visual cues to alert the learner that key information is coming such as changes in color, highlighting text, or using a still slide to show text of key ideas. Segmenting refers to the length of video being created. In research cited by Brame it is suggested that videos be limited to a maximum of 6 minutes. Weeding suggests that extra information, background music or fancy transitions in the video may actually be more distracting than useful in learning. Finally, matching modality encourages videos to engage both the audio and the visual parts of the brain in order to maximize the amount of information being stored. Brame explains that a talking head graphic while giving a narrative is not nearly as effective as a demonstration showing what is being verbally presented (Brame, 2015).

In order to incorporate this project successfully I first needed hardware and software. I was able to secure funds for a desktop computer and worked with our technology department to use an existing license with a video editing software. I researched 3 different options for hardware and software before deciding. The final decision was based largely on the existing infrastructure and the support of our technology department.

From the beginning I believed there were three major benefits that a video editing system could bring to an Agriscience Program. First, educational videos could be created to use during class instruction. Second, videos could be created to promote and highlight FFA Chapter events. Finally, the process of creating video content could be added as a course objective within a class I am currently teaching.

The software system that we decided to use is Adobe Premiere Pro. This was a new system to me and was difficult to understand initially. I found that there were a lot of resources available on YouTube to help me navigate the software initially. I had some idea of what I wanted to do during the videos, such as reduce the volume of a clip, add a transition between still items, or create a title screen, but wasn’t sure how to do these procedures. Online video tutorials, such as those available in YouTube, were very helpful.

My first focus was to create educational videos for use in my classroom. I had a list of potential topics such as: producing and harvesting crops, milking cows, the farrowing process in pigs and watering plants in a greenhouse. Capturing high quality video footage proved to be very challenging. Timing is extremely important in the Agricultural industry, and several great teaching moments slipped by before I had time to think about getting video captured. Moving forward I believe that students could be helpful in capturing video footage. The agriscience teacher is often too busy managing students to be able to capture the moment. A student could be assigned the task of capturing video during a lab, contest or event. This would empower students to be involved and increase the chance of capturing enough video content.

Agriscience teachers getting started with video editing should consider the “Region V Camp” video from this project. This project used mostly still photos from an FFA event along with background music to create a quick recap of the event. There are software programs other than Adobe Premiere Pro that could accomplish this same task. There are multiple phone applications that allow users to create a project similar to this. The finished video was simple but accomplished the goal of recapping the event.

The next challenge in video editing is to add content slides and titles. There are several video editing examples linked in this project that are examples of this. The Lamb Co-Op Chores and the Barn Safety videos both included blank slides with titles or content. These features are similar to a slideshow, but when used in conjunction with video content it brings attention to the most important information. This video also accomplished my goal of creating classroom content. Safety is a topic I teach in every class and definitely a topic that is in need of some enhancing. The video will not only add interest during the safety unit but will also be a great resource for students to look back on. The videos I created focus on safety at the barn, safety with animals, and maintaining a safe environment at the barn. The use of slides in these videos helps to transition from one topic to another as well as highlight the key points.

The most challenging video to edit was the Agriscience Day highlight video. Each year we host the fifth graders for a one day crash course in the Fremont FFA Agriscience Program. High School students create and teach a series of Agricultural based lessons; each lesson lasts approximately fifteen minutes. The video includes interviews with students, video of students teaching their lessons, voice over, B-roll, L-cuts, J-cuts, title screens and background music. The video moves from one clip to another in short video segments. The transitions from one clip to another are done using traditional cuts as well as L-Cuts and J-Cuts. This is a challenging editing technique which requires that audio volume levels match. The background music fades in and out so as to not interfere with the student interviews. This video was used to promote the event, and the program as a whole. It will also be used in future years to help explain to new students what the event is all about. This will hopefully help recruit students to teach the lessons.

Adobe Premiere Pro makes all of these video editing techniques and many more possible. There are many other video editing programs available; some for purchase and some for free. The phone applications offer the convenience of capturing, editing and rendering a project on one device. In my experience, the rendering process on phone applications was time consuming and disappointing. A finished project that is not able to be rendered and shared with others is not useful in Agriscience programs. Adobe Premiere Pro requires users to capture on one device and then transfer this raw footage to a desktop or laptop computer with the software program before editing and rendering can occur. The benefit is that once the raw footage is uploaded into Adobe Premiere Pro it is easily edited, rendered and exported. Every video that was edited in Adobe Premiere Pro was easily converted into an mp4 video format and uploaded to my YouTube channel quickly and easily. From YouTube, video links are copied and pasted to locations where students can access them.

**CHAPTER 4**

I have included video links to my YouTube Channel. These are a few videos which highlight my video editing skills developed during my M.A. Program.

1. [Experiential Learning](https://youtu.be/x2fkk26YZ74): This video was created before I knew that video editing would be the focus of my project. It is a narrative of the Fremont AFNR program.
2. [Personal Leadership Philosophy](https://youtu.be/p-d8xJ-029s): This video was an assignment from CEP 815. The focus was on my philosophy of educational leadership in education. The video blends this philosophy along with my early editing skills.
3. [Region V Camp 24:](https://youtu.be/KWqITP2dKzk) This was the first video I created as part of my video editing project. I used Adobe Premiere Pro to edit this video. It is short and sweet but was useful in the development of my skills.
4. [Ag Science Day 24](https://youtu.be/ekJWdWt6pbo): This was my first big hit in the video editing world. The goal was to create a fun video that rewarded the students who participated this year as well as encourages students in the future to be part of future Ag Science Day events.
5. [Lamb Co Op Chores](https://youtu.be/J1cK2QbjIC0): The goal of this video was to clearly communicate the expectations of chores for Lamb Co-Op members. This will be used in the future as a way of training students and as a resource for students to use.
6. [Barn Safety](https://youtu.be/Ce6xPPlkhrQ): This video will be used in my Zoology class during the safety unit. Students can use it to learn and to review the content before the safety quiz.

**CHAPTER 5**

I am thankful that I was able to do this project as part of my Masters program at Michigan State University. During my masters coursework I have taken a variety of classes in community sustainability, educational psychology, leadership, and technology. These classes have built a strong foundation; a foundation that has proven useful as I worked to create educational resources through video media. I am able to use my knowledge of how students learn, to create videos that are engaging and educational. I also use my understanding of leadership and technology as I determine the best platform for sharing this information with my students and the world. The hope is that I am able to create videos that enhance my agriscience lessons, communicate clearly with others in my community and promote the positive impact that my program is having on students. To think that my first experience with video editing occurred during my undergraduate studies at Michigan State University more than 20 years ago and now has culminated in this resource that will help me as an Agriscience, Food and Natural Resources teacher is very rewarding. Along with the personal satisfaction I believe there is a component of this project that could be beneficial to all Agriscience teachers.

I chose to use a complex, higher quality software (Adobe Premiere Pro) in order to create educational video content. Upon reflection, this may not be the best system for a majority of the Agriscience programs. There are numerous online video editing programs available for free. Some popular programs include; Adobe Express, Kapwing, Canva, Clipchamp, Zapier, iMovie, and Loom to name a few. While I acknowledge that Adobe Premiere is a fantastic program with incredible features, it may not be the best fit for busy high school teachers. The program is not free and takes a considerable amount of time to learn to use effectively.

Unfortunately there are only so many hours in a day. While incorporating video editing into an Agriscience, Food, and Natural Resources program would certainly enhance content delivery, increase program awareness and engage students it must be balanced against the time and resources needed.

**REFERENCES**

Brame, C.J. (2015). Effective educational videos. Retrieved [todaysdate] from <http://cft.vanderbilt.edu/guides-sub-pages/effective-educational-videos/>.

Mishra, P., & Koehler, M. (2009, May). [Too cool for school? No way! Using the TPACK framework: You can have your hot tools and teach with them, too](https://go-gale-com.proxy1.cl.msu.edu/ps/i.do?p=AONE&u=msu_main&id=GALE%7CA199794723&v=2.1&it=r&sid=summon). Learning and Leading with Technology, 36(7), 14-18.

Sharma, M. 2024, May 6. 5 Major Benefits of Using VIdeos in Education. Learning Today. <https://learningtoday.net/benefits-of-using-videos-in-education/>

Wong, D. (2020). Effectiveness Of Learning Through Video Clips and Video Learning Improvements Between Business Related Postgraduate And Undergraduate Students. Internal Journal of Modern Education, 2(7), 119-127.

**APPENDICES**

Appendix 1: [Video Editing Tips](https://docs.google.com/document/d/1hKPhbt4KwchAF7Sa7V8YJxPEM0_cq2zXUDbSZ1y_87o/edit?usp=sharing)

**Video Editing Tips**

**Organize your video**

Start by writing your script and timing it. This will let you know how much video you need to capture and what things you need to make sure you record.

**Tape more than you need**

This is where editing is so powerful, you can cut out the video that you don’t need later and keep only the best footage. In order for this to work, you need to capture more than you think you will need. Hold each shot for a minimum of 10 seconds and don’t be afraid to capture something more than once.

**Volume is important**

Ask yourself what audio you will be using. Will it be a voice over, or from the video? Pay attention to loud background noises that can overpower your intended audio. If students can’t hear the video they will tune out.

**Use Titles / Captions**

For educational videos, a title slide can draw attention to the most important information being presented. Step by step instructions, the name of a person, place or thing, and helpful reminders are just a few examples of content that can be added to a video as a slide or caption.

**Keep it short**

Students consume content in very small / short pieces of information. I try to keep videos to 2-3 minutes, but certainly don’t go over 5 minutes.

Appendix 2: [Storyboard organizer](https://docs.google.com/spreadsheets/d/1PJrtCIBu8CErjIZ4349G6x-dy1Hqz2qqeW6qQj_we_w/edit?usp=sharing)

| PROJECT NAME |  | DATE |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Video / Image** | **Title / Caption** | **Audio** | **Background Music** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Appendix 3: [Program Promotional Video Outline](https://docs.google.com/spreadsheets/d/1PJrtCIBu8CErjIZ4349G6x-dy1Hqz2qqeW6qQj_we_w/edit?usp=sharing)

| PROJECT NAME | Agriscience Program Promo Video | DATE |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Video / Image** | **Title / Caption** | **Audio** | **Background Music** |
| FFA Emblem - School Mascot - Program Logo | Name of Chapter, Theme for year, school saying |  | Beginning of background music (upbeat and loud) |
| Interview with Ag Teacher | The 3 circle model could be used over part of the interview | Explains the importance of the 3 circle model (classroom, FFA and SAE) within the program | Music volume drops |
| A series of video clips from classroom activities (lecture, labs, student presentations, or students working) | "CLASSROOM" | Teacher discusses their educational philosophy or students discuss the learning environment |  |
| A series of video clips from FFA events (LDE's, CDE's, other contests, conferences and conventions) | "FFA" | FFA leaders explain the chapter goals, some of the major events, or why they feel that FFA involvement is beneficial) |  |
| A series of video clips from students working with their SAE projects. | "SAE" | Student interview from what they have gained from their SAE. Or an interview from an employer discussing the importance of learning skills |  |
|  | Contact information slide | Teacher or student gives a final invitation to "be part of our program" | Music volume UP after speaking is done |