

Safety Videos for Major Shop Equipment in Cal Poly BRAE Lab 1

A Senior Project

Presented to

Faculty of the Agricultural Education and Communication Department

California Polytechnic State University, San Luis Obispo

In Fulfillment

Of the Requirements for the Degree

Bachelors of Science

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2018

Introduction

At California Polytechnic State University, San Luis Obispo, students from all majors can take a variety of classes in the BioResource and Agriculture Engineering Department (BRAE). It is essential for future high school mechanics educators to learn the basic shop tools and the importance of safety in the laboratory. In shop 1 of the BRAE Department, there are many different tools students will find in a mechanics classroom. The five main power tools are the Table Saw, Drill Press, Bench Grinder, Radial Arm Saw, and Disk/Belt Sander.

In BRAE 121 Agricultural Mechanics, students learn basic shop skills about lab safety and proper tool usage. From time to time the instructor gives directions on how to use particular tools in order to be safe. But, with busy schedules and unexpected events, students may miss a tutorial on how to use a particular machine. Students need alternative resources to easily get caught up on how to safely use shop equipment and this project will create a safety video for future BRAE Lab 1 use.

How It Works

Importance of Safety in the Classroom

Proper safety practice in the classroom enables people to “appreciate” the tasks at hand, and learn “lifelong skills” that can truly save your body in all forms of jobs. By learning these basic safety skills early in life, students can take these everyday procedures and apply them to their future classrooms as instructors (Miller, 2009).

There are six different key areas for classroom instruction according to “Safety in the School Shop or Lab” by Patrick N. Foster; Illumination and color, Fire Protection, Health Hazards, Personal Protective Equipment, Machine Guarding, and Electrical Safety. It is crucial to make sure all areas are accounted for to make sure students are conducting themselves safely around and while using shop equipment (Foster, 2002).

The skills learned in the shop can be beneficial for students as they use various forms of equipment. A safety video will allow students to become aware of the workings of power equipment if they are absent on the day of instruction.

Main Power Tools in Lab 1

The main five power tools students use are the Table Saw, Drill Press, Bench Grinder, Radial Arm Saw, and the Disk/Belt Sander. Students learn how to use the tools properly to prevent mishaps that could result in injury. In the classes that teach the necessary “how to” tutorials, the teacher takes the time to thoroughly go through all of the safety components and proper use. The students have the opportunity to use these tools in the lab portion of the class schedule. It is crucial each student learns the tools and passes a safety test for the record of proper instruction.

Proper Video Production

There are important aspects to include in an effective video. In the article, “Technical Video’s Not So Tough” by Scott Carlberg he writes, a video should include four main elements: People, Equipment, Words, and Location (Carlberg, 1985). First, people, a good video will require more than one person’s effort. It takes a group that consists of a cameraperson, a director and the performer. Equipment is required for a successful video project. This equipment can include a camera, recorder and a microphone. One of the most important parts of an informative video is the script. It is important to plan out what exactly will happen in the video. Lastly, the location and setting of the video is important to get the desired point across. Videos are sometimes shot out of a studio and in the intended field with many locations (Carlberg, 1985).

Creating a Safety Test for Each Power Tool

Making sure students in the classroom absorb and understand what is being taught requires assessment. This validates the student understands the basics in order to perform a process. In the shop there are many dangers that can arise if preparation is not addressed properly. One way to make sure students in the shop classroom understands the safety and workings of each piece of machinery is to require a safety test. According to *Study Guides and Strategies* website, constructing a true/false test needs to follow some guidelines:

- Use simple, direct language
- Present the correct part of the statement first and then vary the falsity in the second part
- Statements must be absolute without qualification
- Every part of a true statement must be “true”
- Avoid unfamiliar vocabulary
- Avoid long strings of statements (Constructing true/false tests)

Editing Videos

In creating an effective safety video it is important to know how to create a good quality video. iMovie is ready to use on Apple products. iMovie is very simple to use and is easy to understand all of the tricks in using the program. To get started, record and then upload, also called import, videos or photos to iMovie. If using sound tracks or voiceovers, simply upload and import those files into iMovie as well. Once uploaded, organize the files into the order-desired storyboard. Adding titles, transitions and a closing slide increase the overall video appeal. Once the video is completed, export the file. Depending on the video length, this can take several minutes. The final step is sharing the video file or link with those needing access to the video.

Results/ Conclusion

Overall, the safety videos for major shop equipment in Cal Poly BRAE Lab 1 provide students information regarding proper equipment use and safety procedures. The video includes information about the Table Saw, Bench Grinder, Drill Press, Radial Arm Saw, and the Belt Sander. The author created a 16-minute long safety video and made the file available via OneDrive to the BRAE Department, and the video is also hosted on YouTube by the Brock Center for Agricultural Communication.

In conjunction with the BRAE 121 Agricultural Mechanics Laboratory Manual, the video and the lab manual will allow students to understand the workings of the shop equipment. If students are absent from a day of instruction, they will be able to follow along in the laboratory manuals as they watch the safety videos. Once they are through watching the videos and reading the lab manual, students will take a safety test to check for their understanding. The safety test will assure they understand how to use the shop equipment in a safe manner with the addition of watching video demonstrations.

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