CS 4624 Term Project

Spring 2015

Contemplative Practices Interviews Report

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Executive Summary

This technical document covers the contemplative practices interview project. This project is a part of the CS 4624 Multimedia, Hypertext, and Information Access capstone course at Virginia Tech.

This report aims to describe our requirements, design, outcomes, implementation, prototype, solution refinement phases, testing and evaluation, deliverables, plan, and more.

The goal of this project is to raise the visibility of contemplative practices on campus and provide support for developing proposals for contemplative practices. We aim to achieve this goal through a composite video collection containing interviews with various individuals around campus about their contemplative practice and its impact on their lives.

The majority of this report was written in increments over the semester as a check-in and documentation every few weeks between the team, course advisor, and client. Therefore, sections one through seven are written from a perspective while still working on earlier stages of the project between January and April 2015. The user's manual contains sections one and two. The developer's manual consists of section three. The lessons learned portion is contained in sections four through seven and the final presentation PowerPoint. The acknowledgements are contained at the end before the references.

When the project was all finished, we found students had experience in many different disciplines. We met a lot of great people and conduct our interviews to get some excellent footage. Generally, students feel more relaxed and stress-free after practicing. There are endless benefits for their quality of life. Students highly recommended that other students try out a contemplative practice. Performance in the classroom is even helped through practicing. Once we were done filming, we put together an intriguing composite video uploaded to YouTube for the public to view the final product.

Some of the problems faced and lessons learned include: finding interviewees, convincing random students that it was worth their spare time to help with our project for free, coordinating our schedules with interviewee's schedules, equipment availability, originally learning to use the equipment, originally learning to edit the footage, asking the "right" questions that provide us with the information the client is looking for in the final video, making the interviewees feel comfortable enough to open up on camera, creating a memorable storyboard, editing the video so that it actually captures the attention of viewers, rather than boring them with an interview. This journey is chronicled below.

As a developer, to continue this project, you should contact the client. Future developers can film their own footage and interviews and then edit their own videos to continue the goals of the project. It will be added to the YouTube collection with past year's videos.

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Section 1
General Description

1.1 Introduction

Contemplative practices have traditionally been taught in our world's history, often with religious and spiritual undertones. Contemplative practices refer to practices that include some sort of insight, reflection, or deeper thinking on a subject matter. Through this deep reflection, people gain calmer emotions, clearer minds, better decision making, sharper focus, and an improved quality of life.

Popular forms of contemplative practices that typically come to mind for most people include meditation, yoga, martial arts, and more. When participating in one of these activities, a person is able to feel relaxed and peaceful from within. This allows the right mindset for self-evaluation and contemplation. It can be beneficial in all parts of life to meditate or do yoga, but the use of contemplative practices can be taken even further beyond just a simple activity. While these practices have been praised for thousands of year in spiritual communities, only recently have they been used in other more professional ways within the Western world.

These practices are becoming more widespread and are now being applied to all types of fields, such as medicine and education. There is a new sweeping trend where many educators are attempting to add contemplative practices into the education field. Contemplative education could stand to greatly enhance the students' learning experience if it were more widely used.

1.2 Problem Specification

Douglas Lindner, a professor in the electrical and computer engineering department, participates in contemplative practices and sees the positive impacts in his own life. He sees a need within the Virginia Tech community to raise awareness for contemplative practices. The university, within the classical educational system, teaches us to memorize facts that we repeat during a test, homework, quiz, project, or other assignment. However, we never take time to reflect back on these experiences. Looking back on what you learned each day allows you to gain a more encompassing understanding of theoretical subject matter and integrate this material into memory. Contemplating what you learned in the classroom will allow students to think outside the box, engage the subject matter further, discuss and ask questions on a deeper level, feel less

stressed, be more in tune with emotions, and problem solve more effectively.

By taking contemplative practices, specifically reflection, and adapting these techniques for the educational experience, Dr. Lindner along with many other educators worldwide feel that students could gain the same benefits in an educational sense that people gain in a worldly sense from contemplative practices. Since contemplative practices are typically associated with spiritual communities, there is much hesitation in this part of the world to engage in them. It is still experimental so it must be proven further that contemplative practices will be beneficial to students. In the Western world, contemplative practices will continue to face opposition and hesitation. If these obstacles can be overcome, many people stand to benefit from integrating contemplative practices into their everyday lives.

The greatest problem is that people are uninformed about what contemplative practices are, how they are beneficial to your life, and how they can be implemented in the educational system. These obstacles must be overcome before contemplative practices can become more widely visible not just on this campus but in this country. People need to be shown the benefits before they will agree with reform.

1.3 Outcomes

The goal of this project is to raise the visibility of contemplative practices on campus and to support those developing proposals for contemplative practices. We aim to achieve this goal through a composite video collection containing interviews with various individuals around campus about their contemplative practice and its impact on their lives. Many educators, including Dr. Lindner, face opposition to the implementation of contemplative practices in education. Many people still need to be convinced that contemplative practices are beneficial and must be further convinced that these principles can be applied in a professional setting, such as the university's academic curriculum.

By interviewing campus members about their own contemplative practices, we will provide proof of the benefits of contemplative practices. If we provide enough proof, we will be able to raise the awareness of contemplative practices. The intended outcome is that some people will be converted and will implement contemplative practices in their own lives, whether it be through a form like yoga or in an academic sense. Ultimately, our composite video should be added to the archive and help extend stakeholder Dr. Lindner's personal push and advertising campaign in favor of contemplative practices. Our composite video should fit along with the same overall theme and message of the past group's work. It must be well suited to build off what they have already accomplished.

Contemplative practices can have a positive impact on the mind and body of any students who is engaged, so another expected outcome is to positively impact Virginia Tech's educational community. The community who would benefit from these practices is another important stakeholder. The more students and professors who are informed, the better. Since this video

will be publically available and easily accessible on YouTube, hopefully our client can use the video to repeatedly educate people for years to come. Although this video is only a small piece of a much bigger puzzle, every person needs to be informed one at a time until the full benefits of contemplative practices are realized.

This is not a measurable goal or outcome. There is no way to objectively measure the impact of our project or how well it fulfills its outcome, especially since its outcome is ongoing over time. The impact will continue to increase as the videos are viewed more. Therefore, again, it is crucial to put forth the highest video product quality possible that draws in and convinces its viewers.

1.4 Scope, Users, and Functionality

The scope of the project is the Virginia Tech community. We are focused on finding members of the Virginia Tech campus, specifically students, and aim our video to be of interest to the Virginia Tech audience. We will find members within the same community that our video's audience is intended for.

Since the scope and audience of the project is the Virginia Tech community, our users will mainly consist of students and faculty. All that our project needs to deliver functionality-wise is a working, playing video. The video will be uploaded to YouTube so that it is publically available to anybody who wants to watch it. These users will simply need to visit the link to the video and interact with YouTube's interface, hitting play, and finally watching the video.

Section 2

Requirements

2.1 Functional Requirements

Table 1 below contains our list of functional requirements which will be used to help guide our project:

Table 1 - Functional Requirements

	Functional Requirements
1.	Upload YouTube video that is accessible and playable for users from the "ContempVideo" YouTube page

2.2 Non-Functional Requirements

Table 2 below contains our list of non-functional requirements which will be used to help guide our project:

Table 2 – Non-Functional Requirements

	Non-Functional Requirements
1.	Become familiar with the Innovation Space camera equipment.
2.	Become familiar with the Innovation Space audio equipment.
3.	Become familiar with the Innovation Space lighting equipment.
4.	Attend an Advanced Video Training Session to get certified to use camera, audio, and lighting equipment from Innovation Space.
5.	Develop a list of individuals and organizations to interview.
6.	Develop a set of questions to ask the individuals and organizations during their respective interviews.
7.	Contact individuals and organizations about setting up interview times that are most convenient for them.
8.	Ensure camera equipment is obtained and correctly set up for the interview.
9.	Ensure camera is correctly white balanced for the interview. (See Figure 2 – White Balance Examples below)
10.	Ensure lighting equipment is set up correctly using three-point lighting for the interviews.

11.	Ensure audio equipment is set up correctly with no wires or other equipment visible in the shot for the interviews.
12.	Film interviews to use in composite video.
13.	Ensure camera equipment is correctly set up for the secondary shots.
14.	Ensure camera is correctly white balanced for the secondary shots
15.	Ensure lighting equipment is set up correctly using three-point lighting for the secondary shots. (See Figure 1 – Standard Three-Point Lighting below)
16.	Ensure audio equipment is set up correctly with no wires or other equipment visible in the shot for the secondary shots.
17.	Film secondary shots to use in composite video.
18.	Attend Editing Training session to become familiar with the editing software that Innovation Space has to offer.
19.	Use editing software from Innovation Space to put together a 15-minute composite video.
20.	Upload composite video to YouTube.

The figures below illustrate some of the requirements.

Figure 1 – Standard Three-Point Lighting: http://upload.wikimedia.org/wikipedia/commons/thumb/d/d8/3_point_lighting.svg/2000px-3_point_lighting.svg.png

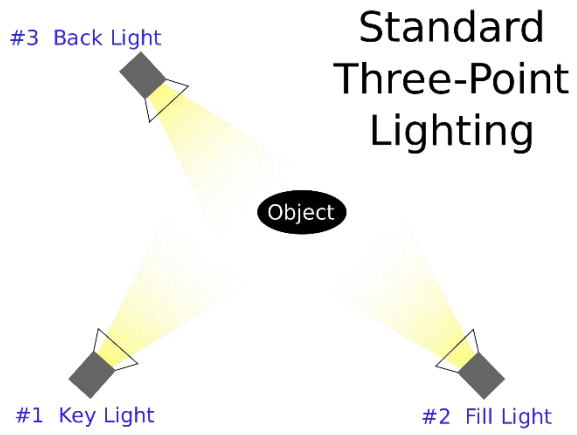


Figure 2 – White Balance Examples:
http://www.disognophoto.com/wp-content/uploads/2012/03/White-Balance-Examples.jpg

Section 3
Design

3.1 Tools and Components

In Section 2.2 on non-functional requirements, many requirements were mentioned that focus mainly on the quality of the video. There is no set system architecture for us to follow, but the smartest design for the contemplative practices interview is the design that produces the best final video. Therefore, our design choices focus on video quality. It is important that we insure that we use the best equipment and techniques available to achieve this goal. This will insure that our video looks and sounds up to standards expected for a professional university outreach project.

After enrolling in the "Advanced Video Production" course in Innovation Space, we are now able to rent out the advanced reservation only equipment. This allows us to film with the highest-quality tools that are offered through the campus. The high-definition cameras include the Canon HFM52, Sony PMW-EX1R, Nikon D7100 DSLR, and Nikon D5100 DSLR. Each of these records with a high enough resolution to upload our video to YouTube in 1080p, the highest quality possible on the streaming site. We will also make use of a mix of Lowell light kits, including LED, softbox, incandescent, and fluorescent lights, depending on what is available at the time. Lastly, for audio kits, wireless lavalier microphones will be enough to fit our needs. This type of microphone is the best fit for an interview, since we can position the microphone close to the speaker's mouth to avoid any outside interference noises in the background, such as wind.

We will also implement various techniques that lead to a better finished product. As mentioned, we will employ white-balancing techniques and standard three-point lighting. Therefore, the picture itself will be filmed with the best equipment and using lighting that achieves the correct colors. Practicing filming with all the equipment before conducting our first interview will help raise the quality of our product.

For video editing, iMovie is the software of choice. iMovie is the perfect fit for our needs, since team members have past experiences creating video segments using iMovie for their own video needs. This software will fulfill our basic needs without overwhelming us with unnecessary advanced functionality of some of the other software choices. Innovation Space in Torgersen Hall on the Virginia Tech campus offers a lab with computers featuring the iMovie software along with classes and helpers who are ready to answer any questions we have, as is the case with the filming, lighting, and audio equipment. For file format, we will use the popular multimedia coding standard MPEG-4. After researching this format for our class presentation,

our conclusion is that the best design choice is to use MPEG-4 as our audio and video compression method. This will compress our video in the most efficient method before uploading it to YouTube for playback.

The video's content needs to be interesting so that it captures the attention of the audience. It must also be informative to make sure that the correct message is sent. Also, the project must be professional so that nothing distracts away from the main message. Viewers should be impressed by both the video's content and quality.

3.2 Interview Design

Another important design choice that must be made is how to conduct the interview itself. In order to make our message clear and concise, we have to ask the right questions. Our questions need to encompass our goals and outcomes and ultimately, explore the details asked of the client. Since our interviewees have tight schedules and setting up interviews can be difficult, we need to aim to create a comprehensive, concise question list. It is critical to avoid re-interviewing anybody and avoid wasting time during the interview time slot itself. We will be able to edit footage accordingly, but the interviewer must ensure we obtain all the necessary information from each interviewee.

To learn more about the art of interviews and their designs, we met with Professor David Cline. Professor Cline is a history professor at Virginia Tech who has conducted countless interviews. He guided us through the basics of interviewing. Also, he emphasized having a comprehensive question list and ran us through the phrasing and types of questions to ask.

Professor Cline talked about how to prepare ahead of time, how to arrange interviews, active listening while conducting the interview, encouraging interviewees to open up, locations for interviews, and more. We should always do some research to prepare about the history, community, and individual interviewee. First, start with an introduction to set the scene, including the date, who is in the interview, and why. The interview should start with broader coverage of the person's life or history, including why they began their contemplative practice. After getting a background, then proceed to delve into specific topics, such as how contemplative practices impact their university experience. This advice has helped us feel more comfortable going into the first interview, taught us how to properly conduct ourselves, and helped to dictate our design choices.

3.3 Comprehensive Question List

Since we are aiming for a 10-15 composite video, we should be aiming for 5-10 interviews each with approximately 5-10 base questions. The interviewer must actively listen and try to guide the interviewee in any way possible to truly answer the question, following up with questions as

needed besides the base questions. It will be critical to ask the right type of questions which build off each other, tell an intriguing story, and deeply explore the subject matter.

We searched through the past semester's group's "Contemplative Practices at Virginia Tech" website and the past videos posted on the "ContempVideo" YouTube page. We used some of the past questions and also developed more of our own. The comprehensive question list that will be followed for each interview is as follows:

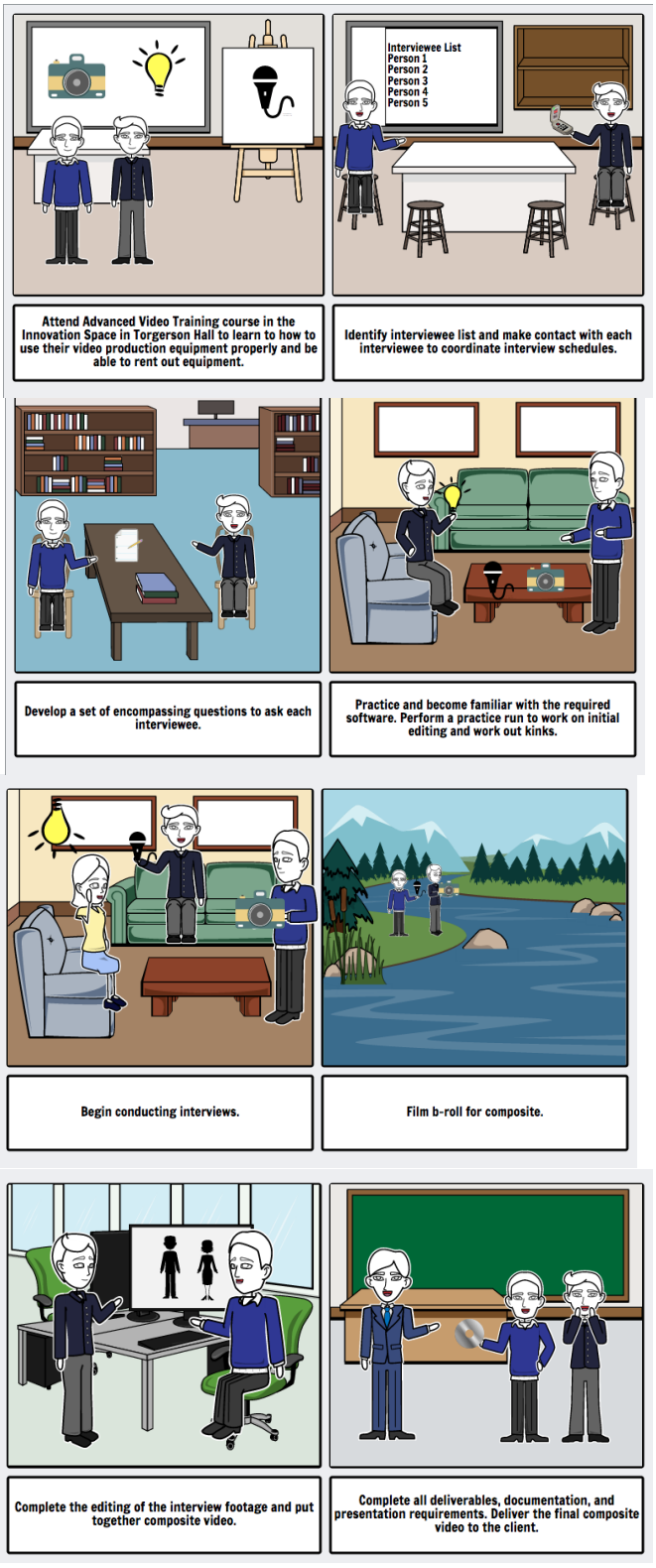
Question List
1. Personal Perspective
What has been your experience with contemplative practices?
How have you applied them/brought them into your everyday life?
What impacts, positive or negative, have contemplative practices had on you or your life (family, social, service, other)?
How did you get started in these practices? Why?
2. Community
What communities are you involved in?
What practices are you involved in and can you walk me through some of them?
3. Growth and outcomes
How can contemplative practices continue to grow and gain visibility?
How have contemplative practices affected your university experience?
Do you believe that contemplative practices should play a larger role in the Virginia Tech community?

3.4 Storyboard

The storyboard is the last integral part of our design. Our goals are to capture enough of the attention of the viewer's so that our message can be spread. Therefore, a storyboard design is needed that will clearly convey our message in a compelling, stimulating, provocative, refreshing, and visually-appealing manner. This storyboard will guide us when it comes to setting up the cameras for specific interviews and secondary shots. This design also dictates what footage will be edited in and out later on in the project.

Figure 3 below is a storyboard for our project. Each individual scene illustrates a step in the process of completing our project from attending training sessions to turning in our final product. Each scene is explained with more detail in their respective captions found below them.

Figure 3 – Storyboard:
http://www.storyboardthat.com/



Section 4
Implementation

4.1 Phases

Meeting: First, we need to fully understand the problems and goals of this project. To accomplish this, we will meet with our client, Dr. Lindner, and discuss the project in its entirety as well as his thoughts, feelings, and aspirations. Specifically during the discussion we will discuss what contemplative practices are, why Dr. Lindner created the project, what the goal of the project is, and what the final product should look like among other things. This will give us a good foundation to start to set ourselves up for success.

Training: After meeting with Dr. Lindner and getting a full grasp on the project, we need to acquire the skills and knowledge required to complete our project. The main skills required for this project are interviewing, filming, and editing. For interviewing, both of us have taken Public Speaking at Virginia Tech and have given and viewed many presentations in our educational career that require asking and being asked questions. We will take these public speaking and active listening skills and apply them during the interview process to have successful interviews.

With regards to filming and editing, however, neither of us have too much experience with either. Because of this, we plan on taking classes at Innovation Space to get some background training in these areas. Specifically we plan on taking the Advanced Video Training to learn about and get certified to use the camera, audio, and lighting equipment available at Innovation Space as well as the Intro to Apple iMovie classes to learn how to edit our film in Apple's iMovie application. After completing this training we should have the skills necessary to carry out and complete our project.

Set up Interviews: Our next step in our project is to set up interviews with potential interviewees. Our interviewees will mainly be comprised of current Virginia Tech students and we want to get a wide range of views and backgrounds to get a thorough representation of students who exercise contemplative practices. To do this, we will first contact individual students, clubs and organizations, and athletic teams that we are aware of who have interests in contemplative practices.

As we go along and conduct interviews we hope to be put in contact with more individuals or groups so we can get as much film as possible to use in our final composite video. We need to make sure to set up interviews early and get our film as soon as possible so we have time at the end to edit the film and make any changes necessary to put together our final product for Dr. Lindner.

Set up Equipment: An important element to ensure high quality film is setting up the equipment properly before every interview. Having already taken the Advanced Video training course by this point, we will reserve and borrow the camera, audio, and lighting equipment and familiarize ourselves further with it by holding a test run before we conduct our first interview. Things we need to make sure we are very familiar with when we set up the equipment is the position of the camera equipment, white-balancing the camera properly, proper placement of internal and external microphones, and setting up three-point lighting correctly. Once we are comfortable with these aspects of setting up equipment we will be ready to start holding interviews.

Interview Process: During the actual interview process, we need to make sure to not only get high quality recordings but also high quality interviews. To ensure this happens, we need to have a set of basic questions for each interviewee that will guide the interview and get the information we need for our composite video. In addition to these basic questions, we will also have a set of specific questions we can ask that are tailored to the specific interviewee based on our background knowledge of them that could allow for more specific conversation. We also need to be actively listening during the interview so that we can ask questions on the fly to allow for a more natural feeling interview instead of just asking questions and receiving answers. We will both take part in all parts of the interview process. Therefore, we will switch off between filming and interviewing. Since we both learned how to use all the equipment, we will both help setting up audio video equipment, as well as the lighting.

B-roll filming: In addition to the interview film we also will need to shoot some secondary footage to add in to our final composite video. This secondary footage will break up the interviews throughout the video to keep the viewer's attention and make it more interesting. This secondary footage will include peaceful and eye appealing shots of places like the Duck Pond and the Drill Field as well as demonstrations of various contemplative practices exercised by our interviewees. These demonstrations will give viewers a first-hand look at how contemplative practices are used in everyday life. We plan on filming this secondary footage at completion of all of our interviews since interviews are a higher priority and if need be we can have less secondary footage as long as we get all the interview footage.

Editing: After the interviews themselves, the editing of the film is probably the most important element of this project. We will together be using iMovie to edit our film and put together a 15-minute composite video of our interviews and secondary footage. We will take the most important and informational parts of our interviews and include them in the composite so we make sure our final product is as beneficial as possible for our client and our viewers. Besides the information, we also need to make sure the video is well put together so that it has a clear purpose with a beginning and an end that allows the viewer to draw the conclusions that we want them to draw.

Presenting: Once all of this is done, our final step is to make some last minute edits and present our product. First we will run our composite video by Dr. Lindner to get his approval and make any adjustments that he thinks are necessary. Once our video meets Dr. Lindner's standards, we will upload the final edited version to YouTube for everyone to see. We will present this to Dr. Fox and the class along with our final report and discuss our final thoughts and feelings about the

project and what we would have changed or done differently.

4.2 Timeline

In order to allow enough time to sufficiently complete this project, we have planned out step-by-step the major tasks of the project. Below, there is a Gantt chart which breaks down each of the major tasks into smaller, more manageable tasks. Each of these smaller tasks listed below also gives a bit of insight into the details of what is needed to complete each major task. Along with each of these tasks is a time frame showing how my time we will dedicate to each of these assignments, which will help to keep us on track and fully complete the entire project on time. This timeline also factors in our work completed to date.

Figure 4 – Gantt Chart:
Figure 4 stretches across pages 16-19.
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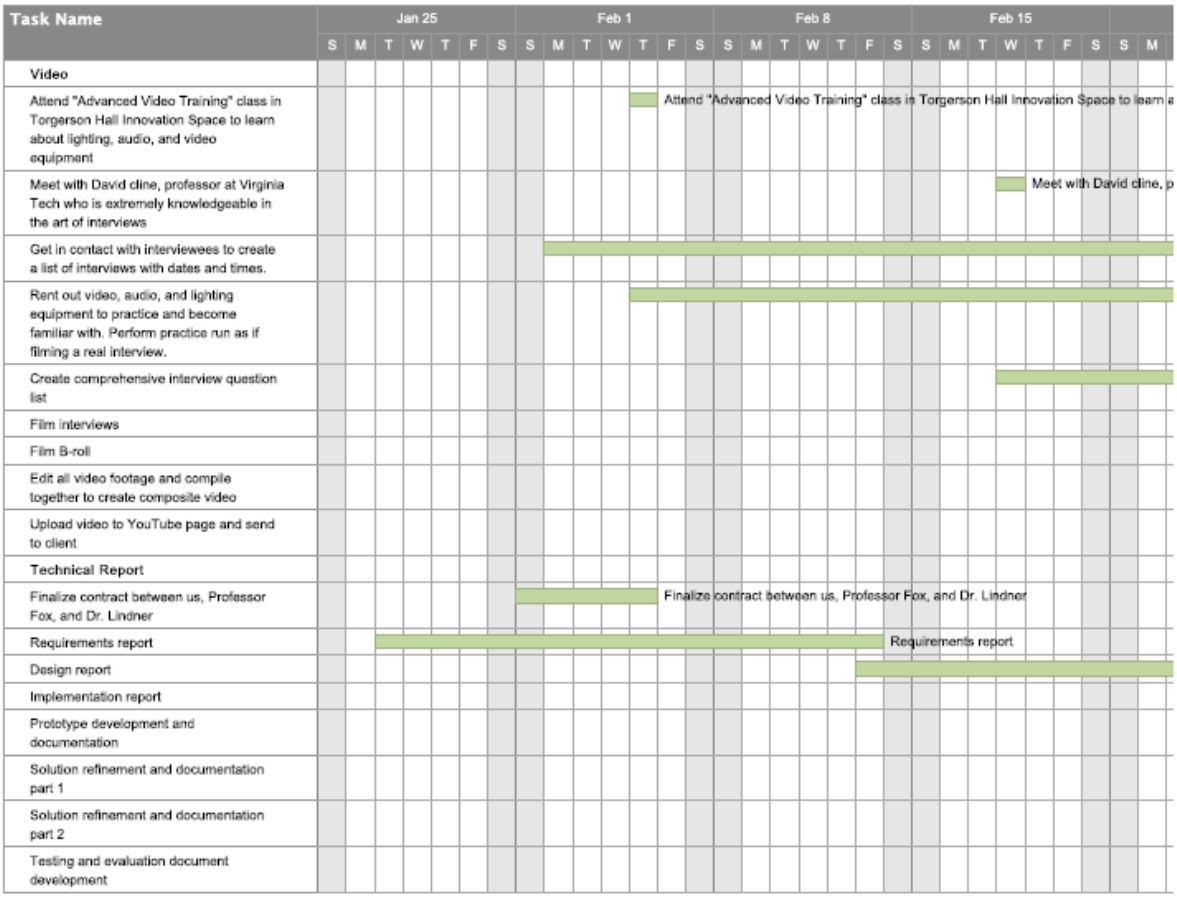

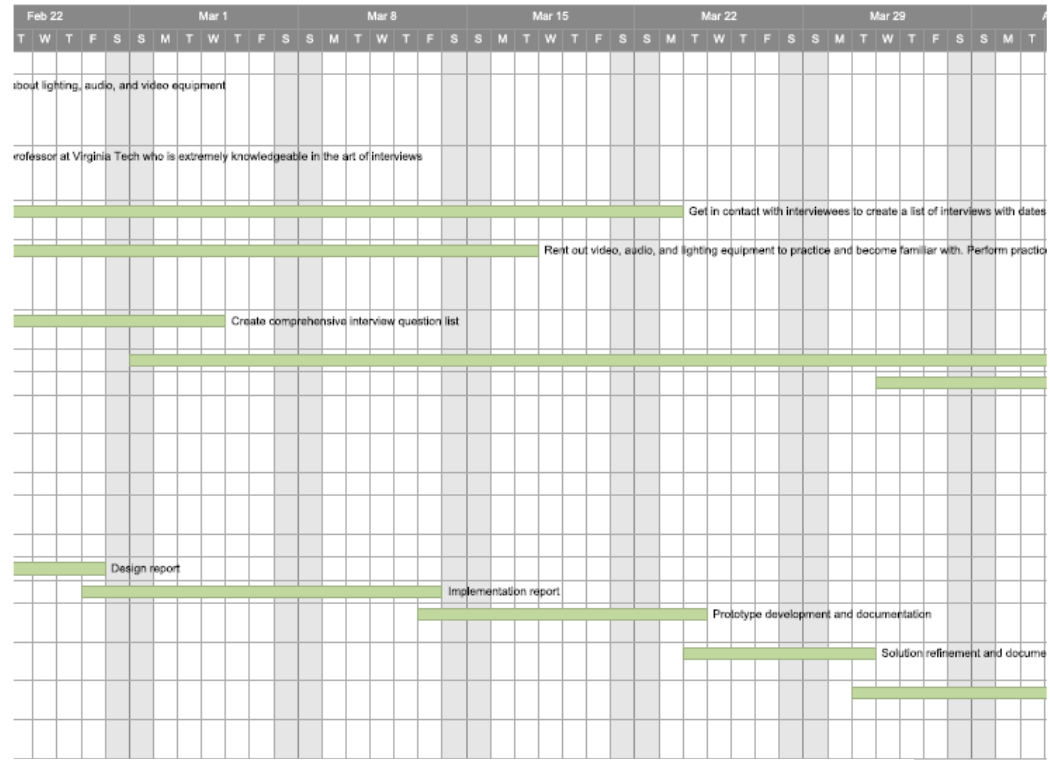
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about lighting, audio, and video equipment
rofessor at Virginia Tech who is extremely knowledgeable in the art of interviews
Get in contact with interviewees to create a list of interviews with dates
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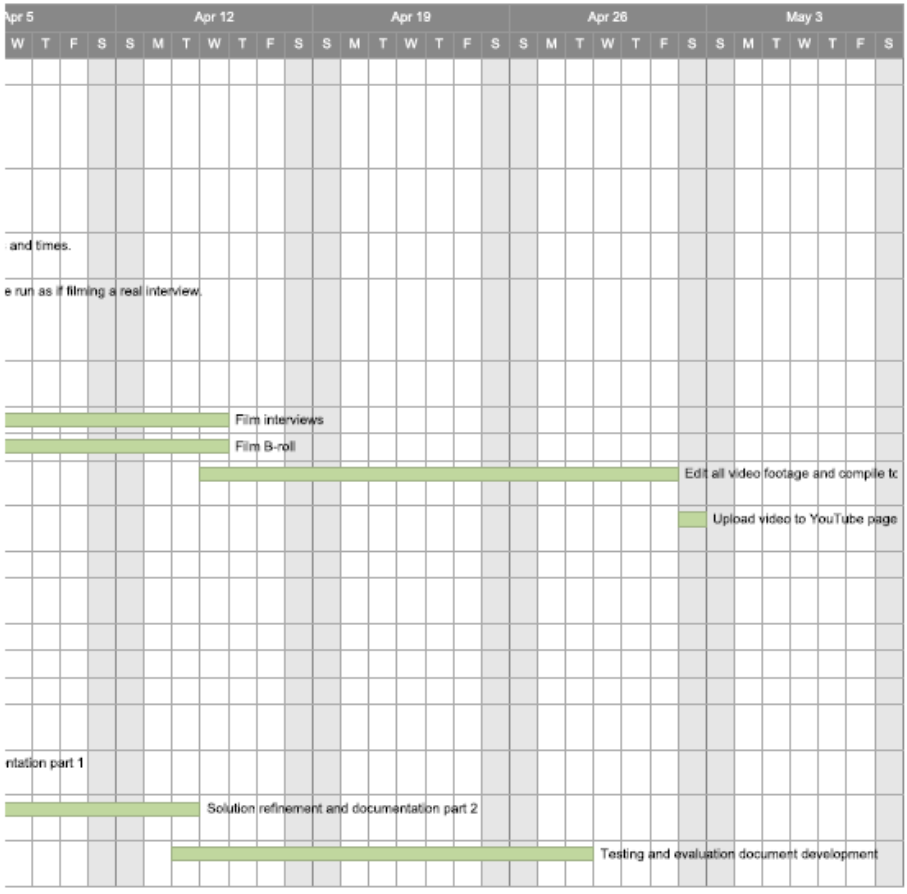
Create comprehensive interview question list
Design report
Implementation report
Prototype development and documentation
Solution refinement and docume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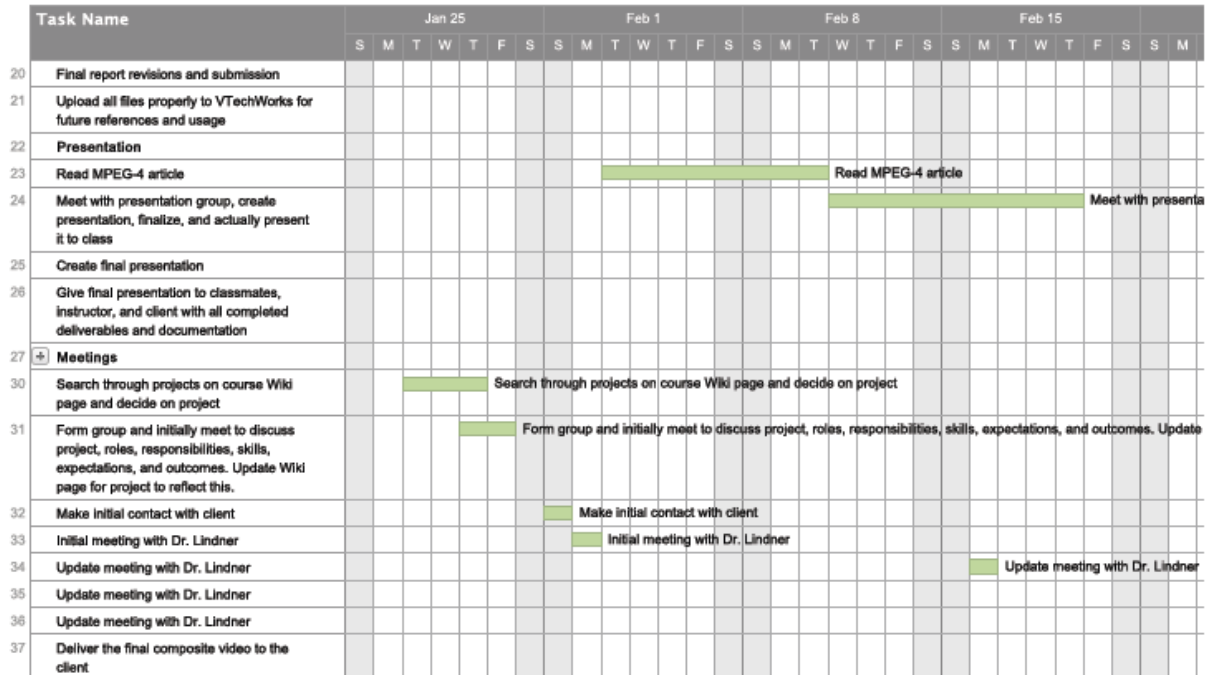
Solution refinement and documentation part 2
Testing and evaluation document development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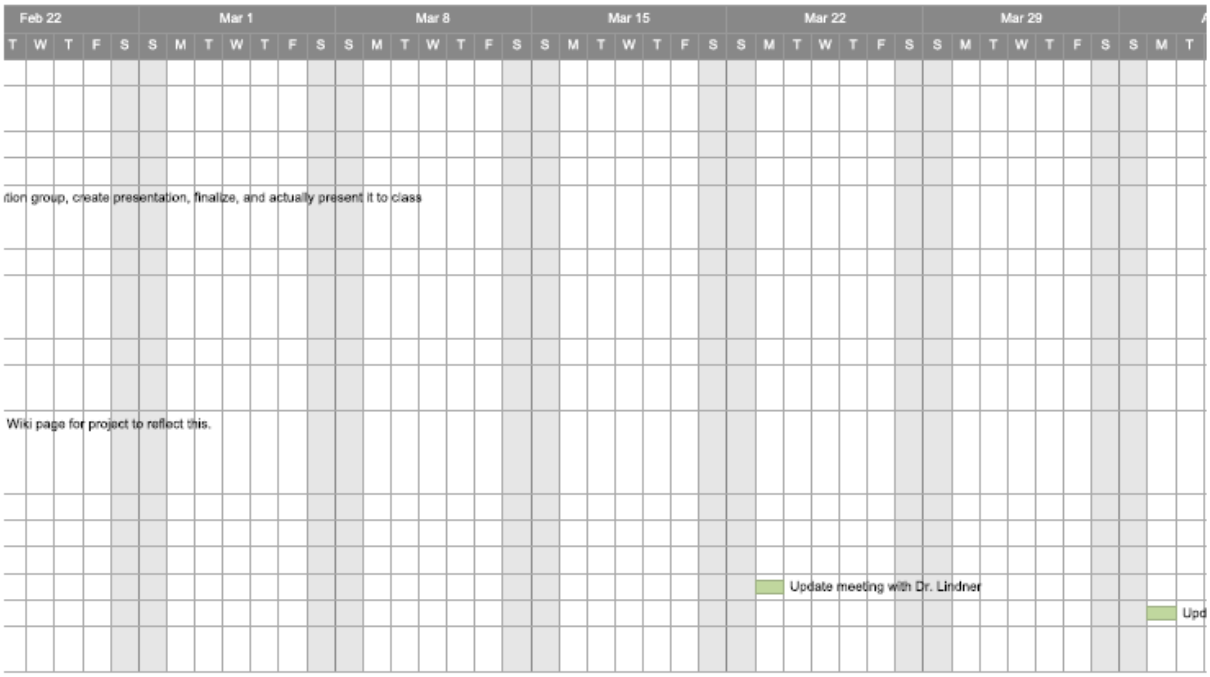
20 Final report revisions and submission
21 Upload all files properly to VTechWorks for future references and usage
22 Presentation
23 Read MPEG-4 article
Read MPEG-4 article
24 Meet with presentation group, create presentation, finalize, and actually present it to class
Meet with presenta
25 Create final presentation
26 Give final presentation to classmates, instructor, and client with all completed deliverables and documentation
27 Meetings
30 Search through projects on course Wiki page and decide on project
Search through projects on course Wiki page and decide on project
31 Form group and initially meet to discuss project, roles, responsibilities, skills, expectations, and outcomes. Update Wiki page for project to reflect this.
Form group and initially meet to discuss project, roles, responsibilities, skills, expectations, and outcomes. Update
32 Make initial contact with client
Make initial contact with client
33 Initial meeting with Dr. Lindner
Initial meeting with Dr. Lindner
34 Update meeting with Dr. Lindner
Update meeting with Dr. Lindner
35 Update meeting with Dr. Lindner
36 Update meeting with Dr. Lindner
37 Deliver the final composite video to the client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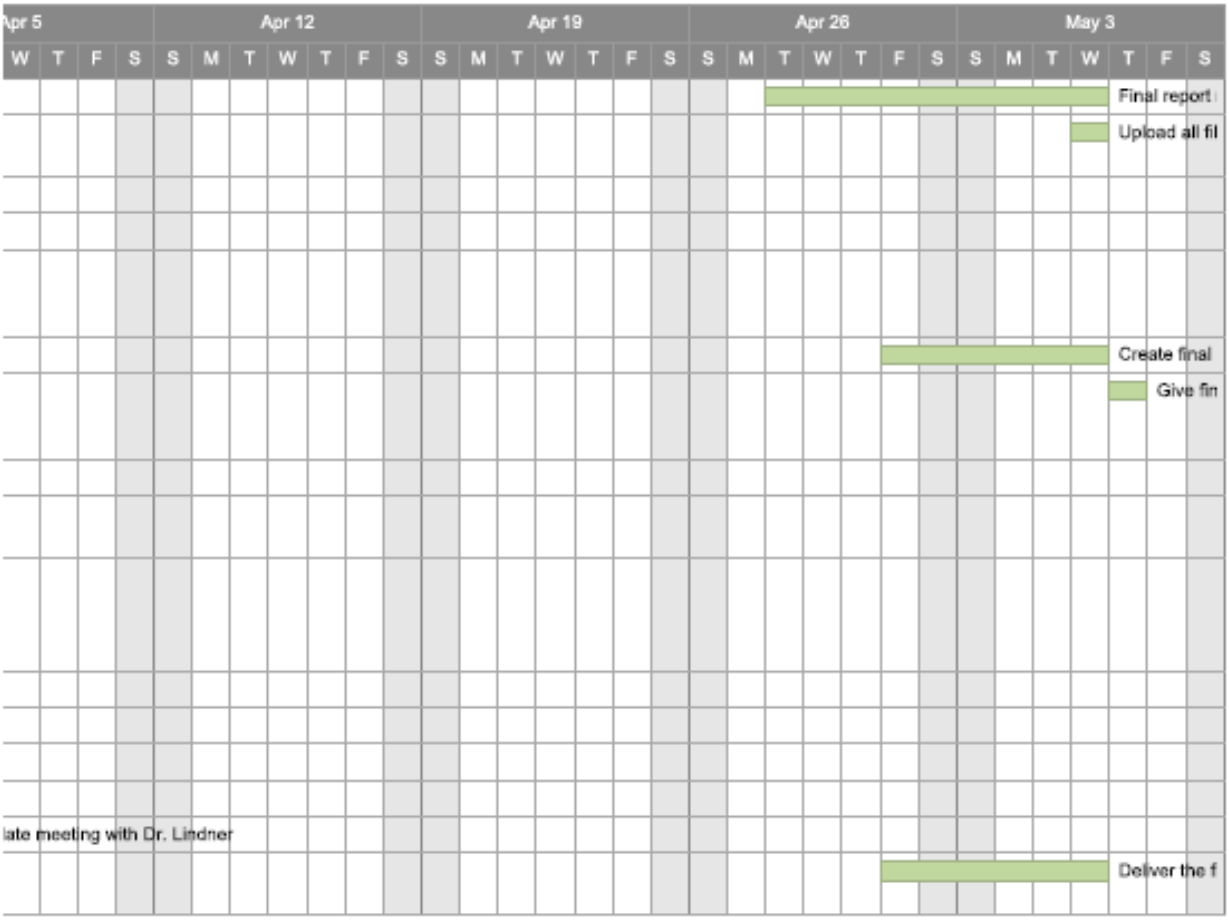
tion group, create presentation, finalize, and actually present it to class
Wiki page for project to reflect this.
Update meeting with Dr. Lindner
Upd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Section 5

Prototype

5.1 Initial Interview Prototype

At this stage in the project, we have met with all the faculty needed to advise us on the project, taken all the necessary hardware equipment courses, taken all the necessary software courses, and learned all that is needed to begin filming the project. We are now at the point where we have contacted all those who need to be contacted and it is time to turn the camera on.

The interviews are the bulk of the work and most important feature of the composite YouTube video. Therefore, we will continue to stick to our schedule and once we complete interview filming, we will move on to the filming of outside b-roll and of classes like meditation, yoga, and Taiji.

The interviews were filmed on-campus, within a private study lounge in a residence hall based on the comprehensive interview question list. This provides a convenient location for students, since they usually are close-by at some point during the day, but also allows us to have full access to the filming location for as long as we need. It allows us to avoid any distractions from people, outside noise, dark rooms, and fluctuations in the lighting. Also, we can film with the interviewing in a location without distractions, on a plain white background, and with the highest definition camera available from Innovation Space.

Therefore, as it stands, our prototype consists of our filmed and edited video footage to date. We have included pictures and screen dumps showing some of our work. This includes, but is not limited to, the setting up of camera, audio, and lighting equipment, photos from interview filming sessions, and screen dumps from editing of the footage. This prototype is intended to give you an idea of what our final interviews will look like, how our equipment will be configured, the type of settings we will use, the types of frames we will edit in an out of the composite video, who is being interviewed, video style, video tone, and video theme. It will provide a sense of what the final composite's layout will look like when finally being watched on the YouTube page. The prototype is contained in figures 5-9 below.

This prototype is a basis for the rest of the project that will continue to build upon. Additional refinements will be made including footage shot, archived, and edited until our final solution is deployed.

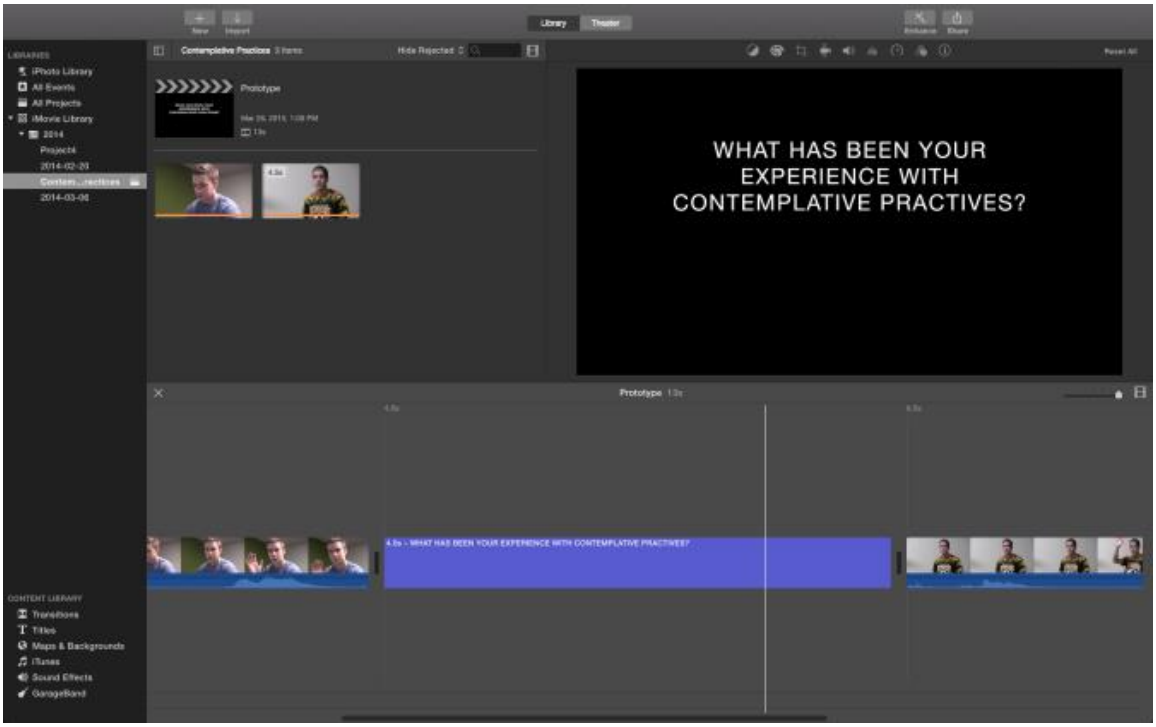
Figure 5 – Camera Setup:
Figure 5 below shows our camera setup from two different views. This is a Canon HFM52 high definition video camera on a Velbon tripod. The attachment on top of the camera is the wireless receiver from the audio kit, which will pick up the audio from the interviewee. When operating on the same channel, this receiver allows the camera to pick up all the audio from the transmitter.

Figure 6 – Audio Setup:
Figure 6 below shows our audio setup from three different views. On the left is the audio kit, which features two transmitters, two lavelier microphones, and a wireless receiver for the camera. We will attach a transmitter to the interviewee's hip along with a lavelier mic to their shirt. This will insure the clearest sound quality during the interview itself.

Figure 7 – Lighting Setup:
Figure 7 below shows our lighting setup. This is a Lowell light kit featuring two incandescent (in the front) and one fluorescent light (in the back) on top of a stand. These lights are perfectly set-up in a standard three-point lighting to best illustrate the interviewee in the chair. The key light and the fill light each have an umbrella to direct the light.

Figure 8 – Filming In Progress:
Figure 8 below features a photo of an interview filming in progress. Here, the entire setup is illustrate in working perfect, working order. This shot also gives an idea of what the video will look like, where we see the interviewee's face through the camera on the white background.

Figure 9 – Editing In Progress:
Figure 9 below is a screen dump showing an example of an editing session of our footage in iMovie, our video editing software. Here, we get an idea of how footage will come together once we upload it through the USB port on the camera. There will be title screens featuring information or questions, along with b-roll, transitions, effects, and still images that string together our actual interviews.



Section 6
Refinement

6.1 Prototype Refinements

As mentioned in the previous sections, the interviews themselves and the information gained through them is the bulk of our project. It is the single most significant element to creating a successful final product. Therefore, the prototype consisted of us finalizing the interview process and filming the interviews themselves.

Since then, we have worked on enhancing this interview footage by adding b-roll footage. B-roll is important in to hold the viewer's attention. They will be bored if they are simply watching a back and forth interview exchange where they only see faces. Our message is strengthened if we can show video examples of contemplative practices actually in practice alongside an interviewee who actually practices. Viewers will have a better idea understanding what is being discussed in the interview and could become inspired to try the practices they see on screen. An interviewer might not be able to fully explain their practice with their words.

In addition, since the video is aimed at Virginia Tech students, we would like to showcase peaceful and beautiful features of the campus to help the video become more relatable to the audience. The shots of the campus will also include footage of students like themselves for the same reason.

The first set of refinements we have made since the initial prototype include adding footage from a group Taiji (Tai-Chi) class led by Dr. Matthew Komelski in War Memorial Gym and the additional scheduling and filming of interviews from participants in the Taiji class. Since the first set of refinements, we have made a second set of refinements to the initial interview prototype that include adding background shots from the Duck Pond and background shots from the Drill Field. Examples of these refinements are contained in figures ten through twelve below. The images illustrate how our video is coming together as we add more film. We will proceed to make refinements until testing the final project.

Figure 10 – Taiji Class:
Figure 10 below shows a screenshot of a video footage editing session in iMovie from two different views. This particular clip is from our footage of the Taiji class.

Figure 11 – Drill Field:
Figure 11 below shows a screenshot of a video footage editing session in iMovie. This particular clip is from our footage of the drill field.

Figure 12 – Duck Pond:
Figure 12 below shows a screenshot of a video footage editing session in iMovie. This particular clip is from our footage of the duck pond.

Section 7
Testing

7.1 Overview

Although we do not have a typical piece of software or code to test, there are other ways that we do have to test our product to insure its quality. We have many stakeholders who are invested in the project, so we have to be sure to keep all of their interests in mind as we test.

7.2 Unit Testing

The first phase in testing was the unit tests. For unit testing, we were able to test our clips continuously as we progressed on the project. Every time before we filmed footage, we tested to make sure that all the lighting and video looked correct. Also, we tested to make sure the audio was synchronized. Once filming was completed, we would test that the footage was filmed correctly by quickly playing back on the camera.

Further examination would occur when we upload the footage to the computer and play it back on a bigger computer screen. Here, we can truly take the time to make sure that we did it all correctly and there are no errors with the video or audio. This allows us to insure that each individual clip from each individual filming session is correct and error-free before we try to integrate them in any way. If we did anything wrong or decided to make any changes to our interviews or process, these could be implemented prior to the next day of filming. Although we did not encounter this, it is also possible to re-film some of the units if we did not like how the footage turned out during unit testing.

7.3 Integration Testing

The integration of our units occurs when we went to edit the footage. Obviously, our video would be ineffective if we just strung together unedited full interviews and b-roll. Therefore, how we integrate the footage is especially important. Here, we can see how each of the individual components comes together to make a whole. We start to actually piece together clips from our interviews. The composite starts to build itself here. In order to make sure our interviews were successfully integrated together, we tried to keep as many consistencies as possible between filming sessions. Therefore, we used the same interview room, cameras, lighting, and audio equipment.

In iMovie, once we have imported all of our footage, the integration testing begins. We were able to see that our video clips, for the most part, look fluid when cutting between them. If some clips did not line up well, we can make changes using the features of the iMovie software. These changes include adding transitions, text, background music, adjusting volume, adjusting brightness, and fixing anything else that could distract the user. The goal is to make a finished product that is consistent throughout the entire viewing experience. Although we are not experts by any means, we have basic personal experiences as an end-user, which we used to guide our decisions on what would be visually-appealing and stimulating in a composite interview YouTube video for students.

7.4 Security and Privacy Testing

With our project, there are very few security or privacy concerns. Since this is not our own system, we do not have to worry about malicious users. The product is just a video, rather than something like a website or app that stores user information. The project and its associated materials and footage have been kept private within the group members. No outside sources have had access to the footage or hardware to possibly tamper with it. Once the video is uploaded to YouTube, it is out of our hands. YouTube does have many security and privacy procedures, such as a user account and password, which should prevent any person from accessing the account where the video is uploaded. Even we do not have access to the account. Once we finalize the copy, it will stay untouched on the web page.

We have also taken measures to insure the privacy of the video participants. Since it will be publically available to anybody on the Internet, we made sure no sensitive information about the participants will be revealed in the video. They are also fully aware of the video's purpose before agreeing to be on camera and understand it will be on YouTube.

7.5 Usability and System Testing

The final phase of testing consists of usability and system testing. For the most part, the system has been tested for quality as we have gone through the other phases. Recall the list of all of our functional and non-functional requirements. As a final check, all of these requirements must be met by the time the video is given to Dr. Lindner for upload. Lastly, we will make sure the final integrated video will actually play on the computer and is in a universal file format. Once the video gets uploaded, again we will ensure that it all uploaded correctly. As a public user, we will visit the URL and check that it plays, like we expect, from the YouTube website. If this test passes and the video is correct from start to finish, then the project is fully tested. We will also show the video to a set of testers, to see how they react, critique, and are influenced by it and make changes accordingly based off their feedback.

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