Concept Module Construction

Initial construction of the concept module is done using Microsoft PowerPoint. Google Slides can be used as an alternative. Google Slides has good collaboration tools but may not have the same support for integration with other software, discussed within this document. For this discussion Microsoft PowerPoint will be the creation software. Once the PowerPoint slides have been completed there are several ways to create a multimedia presentation. It is important to remember that all final products **must** meet the requirements of the Americans with Disabilities Act (ADA). https://adata.org/learn-about-ada. Some of the common issue which need to be addressed ADA include making sure a complete transcript of any audio is provided, closed captioning and that proper colors are used, for those with color deficiencies. Additional parameters may need to be followed depending on the methods used.

Methods

There are multiple ways to create a dynamic content module, each method requires different equipment, software and technical skills.

1. Annotate each slide with Audio (done within PowerPoint). A transcript of the audio on each slide is required and can be created using Dragon Naturally Speaking (Dragon). https://www.nuance.com/dragon.html A trick is required to separate the audio file from the PowerPoint slide. Make a copy of your PowerPoint slides, change the extension to ZIP from the normal PowerPoint extension, then decompress (unzip). The results of this process will be the separation of the audio for each slide from the slide, the naming of the audio file will be automatic using the slide number. The audio file can then be used in Dragon to create a transcript, the transcript may require editing.
2. Annotate all the slides together to create a video, generally this requires a screen capture program such as TechSmith's Camtasia and a high quality microphone. Camtasia can be directly accessed from within the PowerPoint slides. The creator will discuss each slide as it appears on the screen and when completed generate a video. Once the video file is generated, it will be uploaded to YouTube and a closed caption can be auto created and then edited. A desktop camera can also be used to do a picture in a picture.
3. A video file can be created of the 'lecturer' and the PowerPoint slides shown behind the individual, more like what would be done in a traditional classroom. The difference is the slides will be added later, so that the traditional problems of a bright screen and dark presenter are eliminated. This method would employee the use of a video camera, wireless microphone and a green screen. This method generally requires more advanced digital video editing abilities. The closed captioning would be obtain once the video is uploaded to YouTube.

Software

- Microsoft PowerPoint (or other slide making programs)
- Dragon Naturally Speaking to create a transcript (or other transcription programs), used in method 1.
- Tech Smith Camtasia (or other screen capture programs) used in method two. Camtasia will integrate into PowerPoint, it does have some abilities to do green screen discussed in method 3.
- Adobe Premier (or other video editing software that will do green screen) discussed in method 3. Adobe Premier is a high end video editing software and can require a steep learning curve.

Hardware

- A high quality microphone, this is probably the most important item that you can have to create a quality module. The microphone should be mono-directional so that outside noise are not an issue. It is **not** suggested to use a microphone on a headset. Required for methods 1 and 2.
- A Desktop Camera can be used to capture video in conjunction with Camtasia for method 2 and a small image of the presenter is placed in the slides (Picture in a Picture). This requires care that the image does not reside on top of text.
- If a video camera is to be used in conjunction with a green screen as described in method 3 the following are required.
    - A tripod to support whatever camera is chosen, the quality of the tripod depends mainly on the weight of the camera.
    - A lavalier wireless microphone is suggestion, a reasonable quality is required to reduce noise/interference (a high pitch hum is common with cheap devices). The camera used needs to support an external microphone connection.
    - The camera could be a cell phone, a DSLR camera or a video camera.
        - The camera should be able to produce 4K video.
        - Some DSLR cameras will only record for a limited time period.
    - A green screen is a monochromatic piece of cloth that can be hung behind the participant. The fewer the wrinkles the easier to do the green screen.
    - Optional lighting can reduce shadows on the participants face.